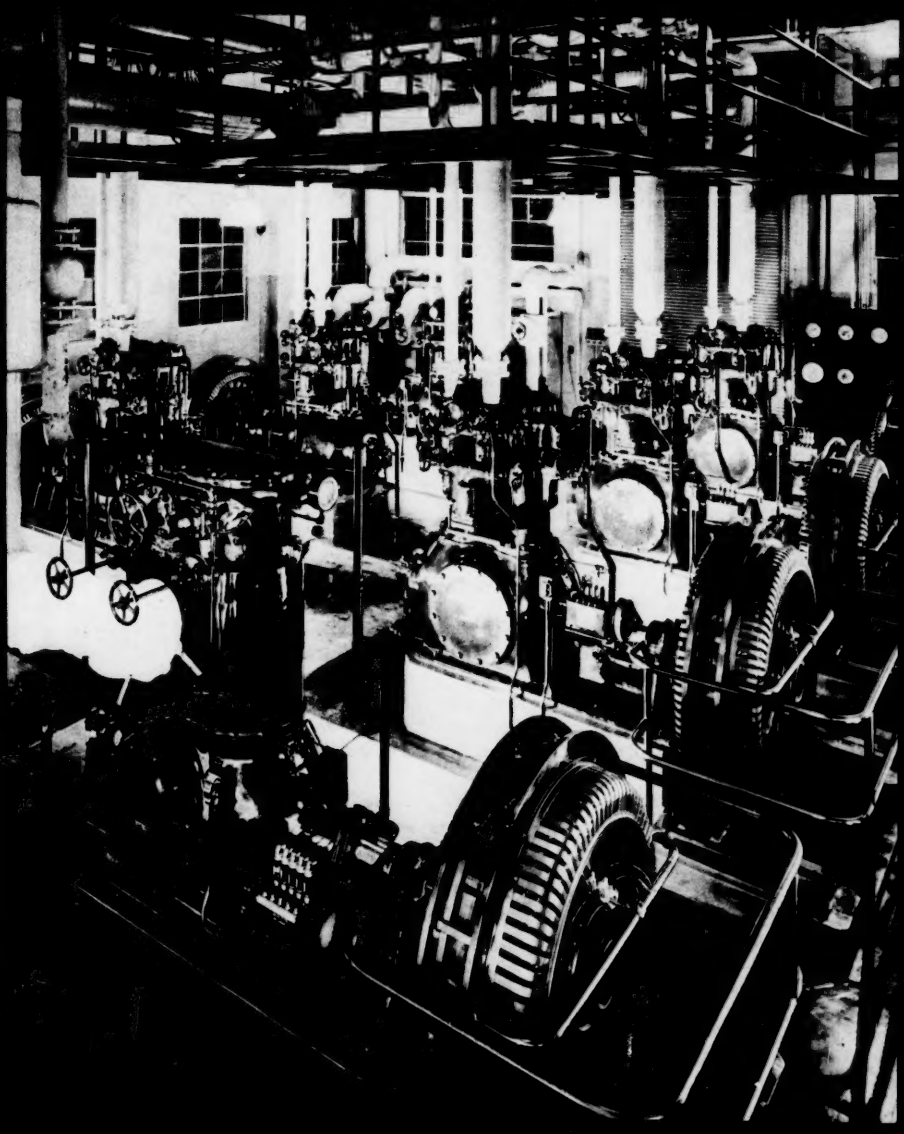
Refrigeration



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WAYS TO SAVE ON OPERATING COSTS

reduce 1 maintenance costs
2 fuel consumption

by lubricating with TEXACO D-303 MOTOR OIL

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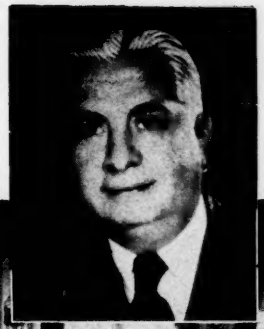

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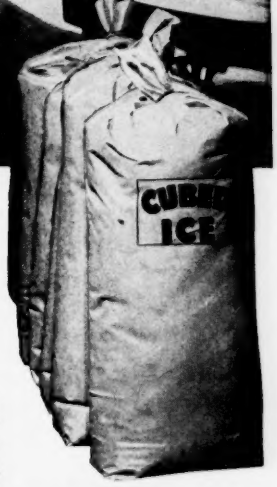

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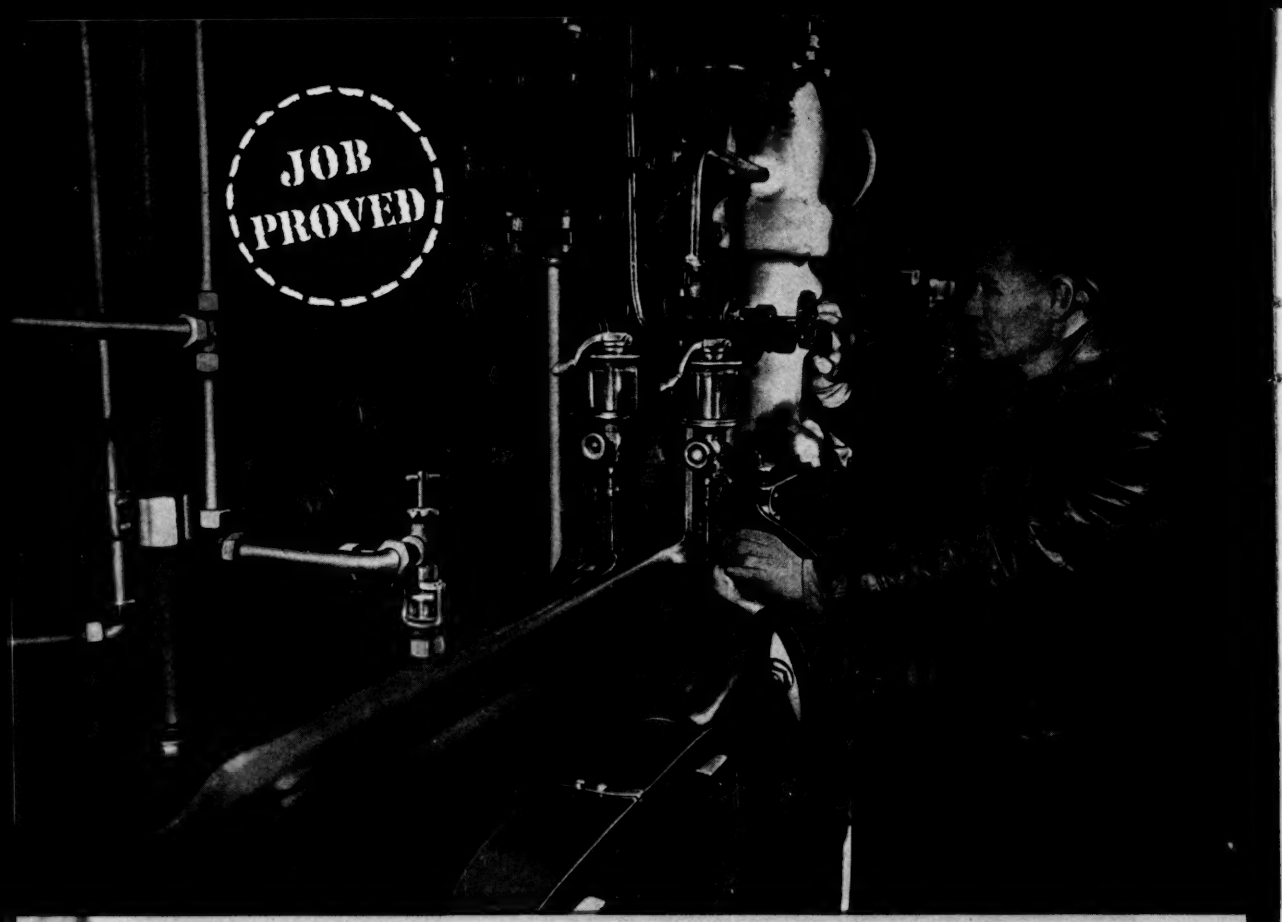

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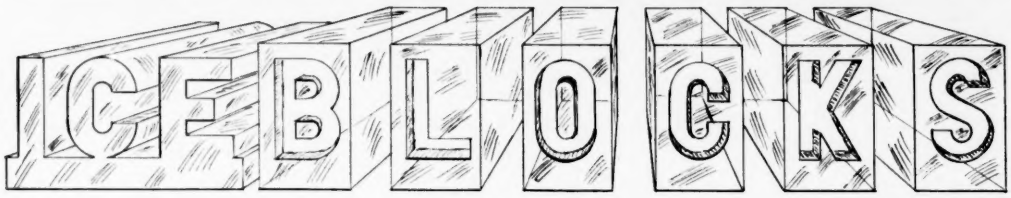

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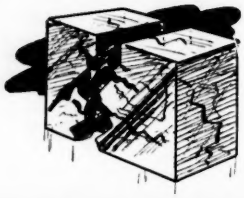

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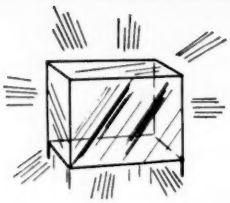

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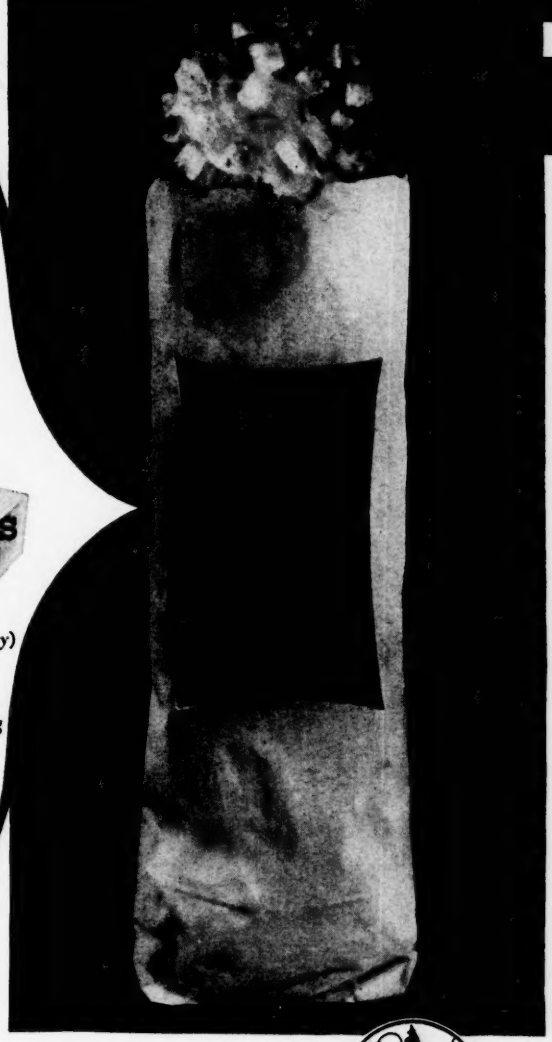

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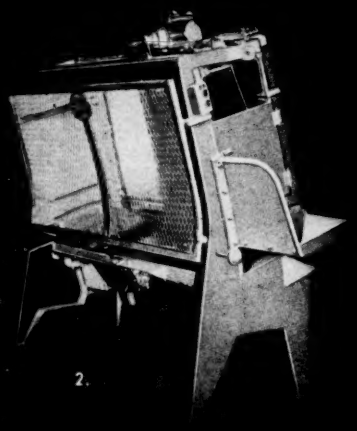

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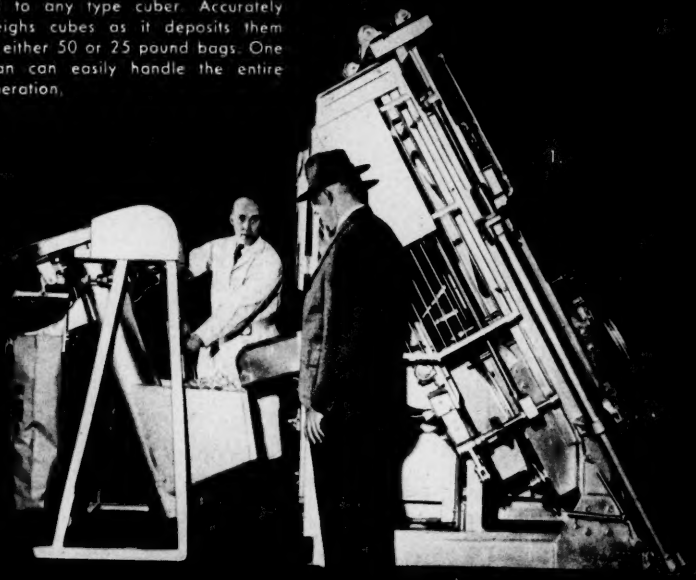

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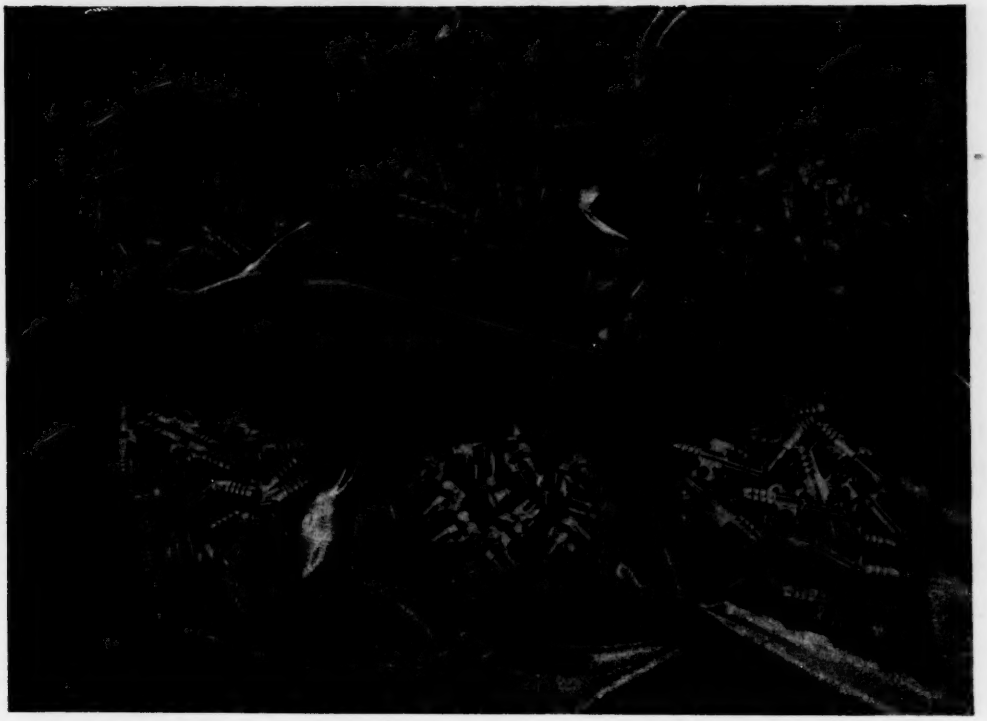

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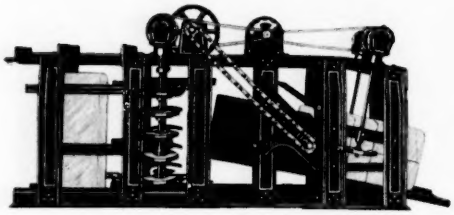

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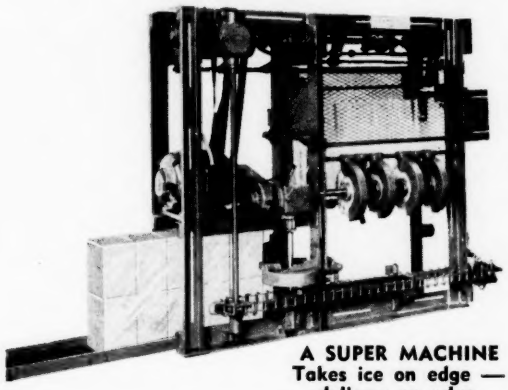

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Recommended

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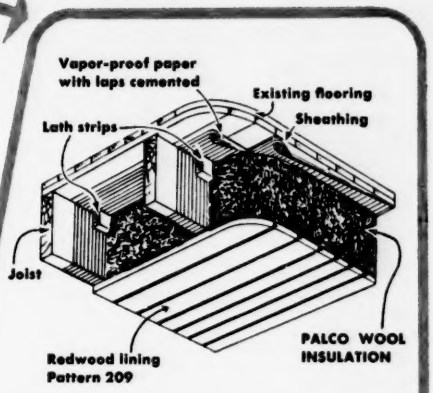

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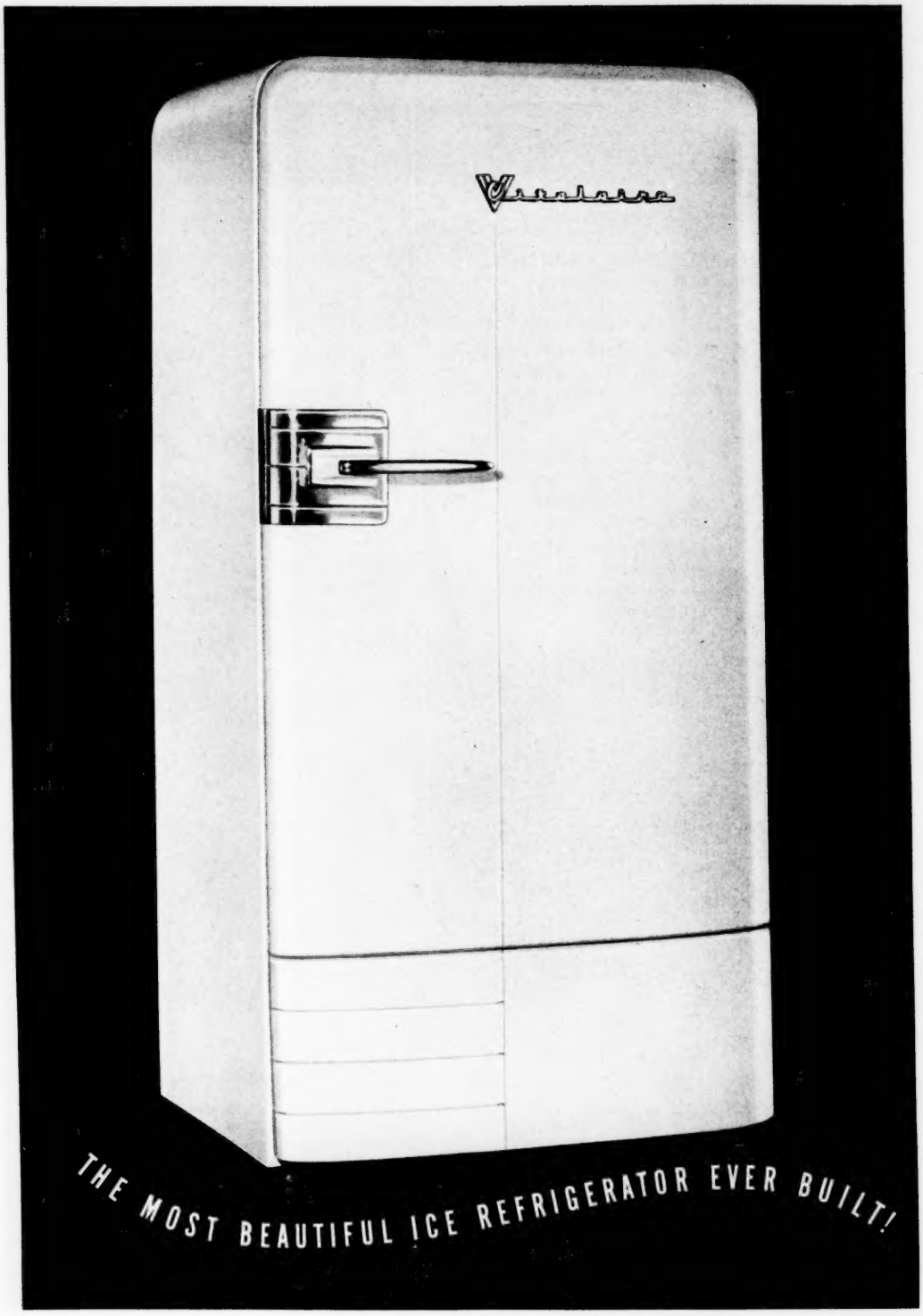
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NEW LIFE for Ice Sales!

THE ALL NEW Vitalaire

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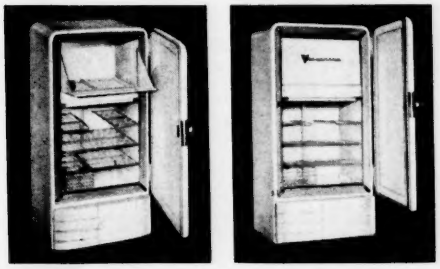

Model K140-6 *These views show other features you asked for. . . the sturdy drop front ice door;—the new modern shelves and shelf arrangement; and the new telescoping drain tube.*

Here it is! The all *new, completely new* Vitalaire . . . the "big beauty" that will give your ice sales a new lease on life! Check it, compare it against *any* other refrigerator . . . even $399 mechanicals. You'll know why we say it's the most beautiful refrigerator every built. You'll *know* it's a "natural" for your sales and rental plans the moment you see it! Built to Ice-Men's specifications . . . . This all new Vitalaire represents a meeting of minds by practical ice men . . . gives you the appeal for sales, the durability for rental plans that means increased, profitable ice tonnage . . . and the ease of servicing that you've long been looking for! Build for now and the future . . . see *and sell* this beautiful, new Vitalaire!

—more than 6 cu. ft. of food storage space!
—ice capacity of 140 lbs. in one piece! *Full* 100 lb. Reicer.
—plenty of shelf area—more than 10 square feet!
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MAIN OFFICE and PLANT—MORRISON, ILLINOIS

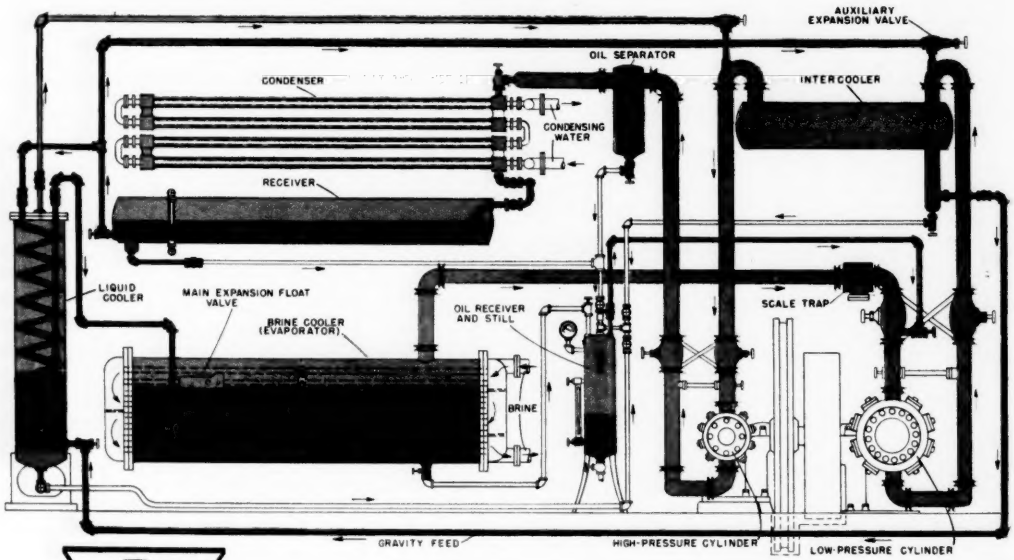
KEY TO MORE EFFICIENT REFRIGERATION!..

The World's Greatest Lubrication Knowledge and Engineering Service

To get more tonnage at less cost from your refrigeration plant, the compressor oil you use must protect against wear and the formation of harmful deposits. Also, it must *not* impair heat transfer efficiency by forming films of congealed oil or gummy residues when carried over to other parts of the system.

Famous Gargoyle Arctic Oils have all these necessary characteristics. Products of 84 years of lubrication experience, these great oils are chemically stable, resist oxidation, have low pour points and are moisture-free. In thousands of plants their use has resulted in more continuous refrigeration at maximum capacity, reduced friction loss, less time and money spent on repairs and cleanings.

Enjoy all these advantages by giving *your* refrigerating compressors Correct Lubrication!



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Correct Lubrication

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

In the Spotlight

PRODUCTION of frozen fruits, berries, juices, and vegetables in the United States reached a new peak in 1949. The combined fruit and vegetable pack was nearly 918 million pounds, an increase of 12 per cent over the 816 million pounds packed in 1948. See story on page 58.

SHOWING how to sell refrigerators by demonstrating, from real life, how a sale was made—or not made—has been proven successful in a course in salesmanship. The purposes, methods and results of such a plan are told in the story on page 43.

STANDARDS for low rent housing under the Housing Act have been revised to permit installation of ice refrigerators where ice delivery service is regular, where the use of ice is general, and where it is shown to be an economical form of refrigeration.

RESEARCH by the U. S. Department of Agriculture shows that better fresh spinach can be produced by longer spinning and better refrigeration in the retail store.

THE FISH INDUSTRY of the United States uses a million tons of ice a year.

A SURVEY on processed ice service provided by nine Eastern ice companies shows a wide variation in prices, costs, packaging and other forms of service. For results of survey see page 45.

GROCERS, faced with competition from chain stores, installed iced vegetable display cases, increasing their produce sales 100 percent. See story on page 41.

USING STEAM to increase humidity in a cold storage room doesn't seem to make sense. But it has been found that the temperature rise is quite negligible and it does do the work. See page 26 for details.

A NEW ICE PLANT to supply ice for fishermen and others has been opened at Rockland, Me. With modern equipment throughout, it will produce 130 tons of ice per day. The plant is described and illustrated in article on page 44.

INVENTORY of dried eggs as of January 31 totalled 75,918,088 pounds valued at $98,116,167, while the butter inventory was 100,736,962 pounds valued at $62,434,199.

INSTRUMENTS provide an important basis of operating refrigerating plants, for they are necessary as a means of showing and recording what is going on in the refrigerating system. Professor W. T. Miller of Purdue University on page 27 tells how they are used and applied.

POULTRY, drenched with an ice cold water spray, cools quickly, the process is more sanitary, labor is saved and a better cooling job is done with less handling. For description of such a poultry processing plant, see page 21.

TEXAS ICE DAY was proclaimed by Governor Allan Shivers of Texas, setting it as May 17 in commemoration of the one hundredth anniversary of the manufactured ice business in America. In his proclamation, the Governor paid tribute to Dr. John Gorrie of Florida who designed and built the first ice-making machine in 1850.

THIS MONTH'S COVER: Good housekeeping is evident in this compressor room in new ice cream plant of The Carnation Company, Oakland, Calif.

TO SUPPLY the growing demand for orange concentrate, the California Fruit Growers Exchange has completed a half-million dollar plant expansion at Ontario, Calif. The article on page 19 gives a detailed description of the plant, with pictures.

ANNUAL CONVENTIONS of the Eastern States, the Northwest and the Mountain States Ice Associations held during the past month are reported in this issue.

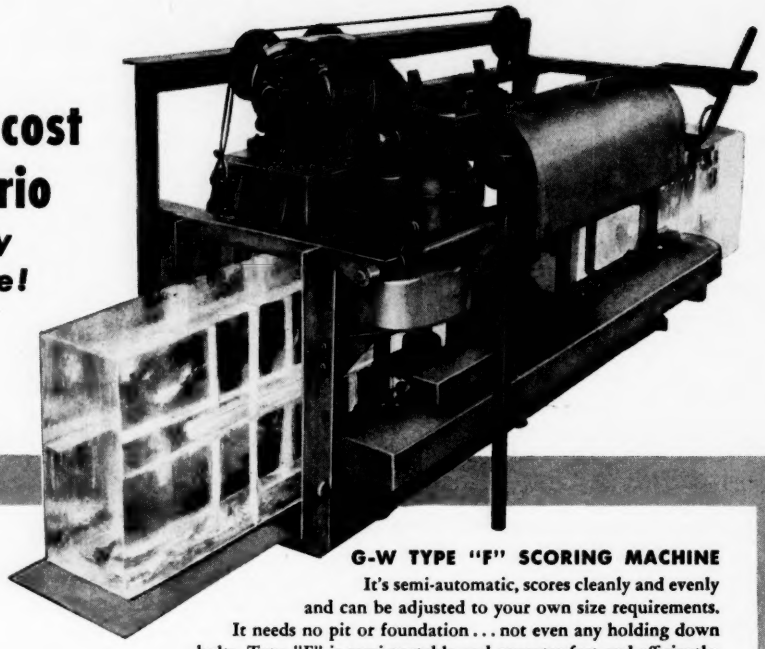
ICE SKATING facilities have been provided in the new arena addition to the Auditorium, Milwaukee. See page 24.

ALL THE LEGISLATION necessary for federal domination over our business civilization awaits action in Washington today—at the turn of the half century. For the next fifty years—and the next fifty after that—you and I and our kids are going to be riding on the coat-tails of what happens in Washington—as soon as possible, if the fair-haired planners have their way. —From an address at the Pacific States Warehousemen's Ass'n.

PUBLICITY for a local ice company was provided by a Jackson, Tenn. newspaper through an illustrated feature article on the icing service the company renders. Story on page 22.

HOW to reconnect a water defrost unit cooler in a freezer storage room for flooded operation and get more capacity out of the unit? Horsepower, tons, capacity—they can be rather confusing unless you know the conditions, especially the suction pressure. Professor Venneman answers these questions on page 30.

a low cost G-W trio for every ice house!



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It's semi-automatic, scores cleanly and evenly and can be adjusted to your own size requirements. It needs no pit or foundation . . . not even any holding down bolts. Type "F" is semi-portable and operates fast and efficiently. One man can score an average of three 300 or 400 lb. cakes a minute. Sturdy and dependable, you can bank on Type "F" to give you years of trouble-free service.

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Keep your Cubing and Scoring Machines at their original high peak of efficiency . . . always insist on G-W Saws for replacement. Remember . . . there's only one *genuine* Gifford-Wood Saw and it costs no more than regular blades.

EVERYBODY IS TALKING ABOUT THE NEW "ECONOMISER"

Initial low cost plus low operating maintenance have combined to make the "ECONOMISER" a top favorite with cost-wise ice manufacturers from coast to coast. Compact, only 7'6" high, the "ECONOMISER" breaks, sizes, and delivers to the bagging hopper, three separate grades of ice at an average rate of 200 pounds per minute. No buckets or chains to get out of order. For complete information on these or any units in the complete line of G-W ice equipment write your nearest Gifford-Wood branch office.

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Fruit Freezing—Evaporating Plant Saves on Construction Costs

Equipped with low temperature evaporating equipment for either hot-packed or frozen juice, this half-million dollar plant expansion will process oranges and other citrus fruits.

JAMES E. MUNFORD
Los Angeles, Calif.

A HALF million dollar plant expansion at Ontario, California is helping to place the California Fruit Growers' Exchange abreast of the growing need for evaporating capacity. Quantity of oranges going through the by-products plant has been on the increase over a long period of time. Strict economy of construction plus special designing for operating efficiency characterizes the new extension which will double the present plant capacity.

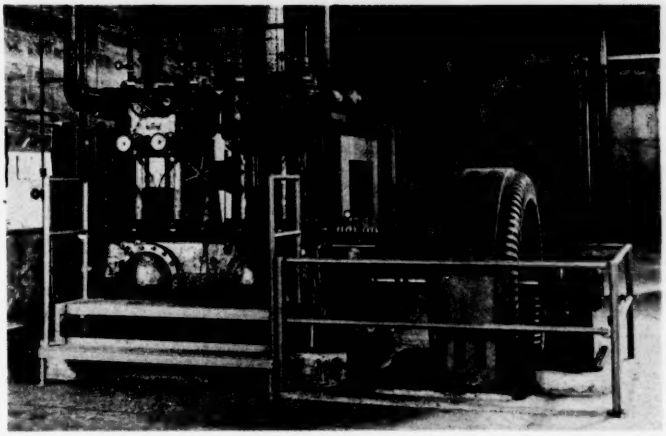
Low temperature evaporating equipment which can be used for either hot packed or frozen juice was selected for installation rather than conventional steam equipment because of the potential demand for frozen juice concentrate. The Exchange then placed into operation a Mojonnier Lo-Temp evaporating unit in a new building designed especially for the eventual production of frozen concentrate as well as other concentrated orange juice products.

Early last year specialists trained in setting heavy equipment for industry were sought to make the complicated installations. This assignment was finally given to MacMen, Inc., General Contractors of Los Angeles. The installation was completed in June, 1949 and operated continuously until the end of the Valencia season with only an occasional five hour shut down for cleaning.

The Exchange is now in the process of installing can filling and freezing equipment which adapt the building and evaporator to the following step-by-step process for which it was originally intended.

Progress of Fruit

The fruit will first be elevated to inspection belts. Good fruit will go to storage bins with spiral-ramp baffles that prevent bruising, then through a brush-and-spray washer and a "sterilizing" tank containing a detergent solution. In the juice rooms the fruit will receive a final inspection. Then another washing by sprays and brushes, the water containing five parts per million free chlorine to give a substantially sterile outer surface.



A 700 hp York compressor powering the new Mojonnier Lo-Temp Evaporating Unit at the California Fruit Grower's Exchange Plant.

After being machine sorted for size the fruit will go to extractors. Eight handle oranges of average size, and two are for grapefruit and over- and under-size oranges. The juice flows through stainless steel troughs to finishers. One with a 0.027-in. screen will handle eighty percent of the juice. Another with a ⅛ in. screen will take twenty percent. Juice from the latter finisher, containing pulp and juice sacs, is pumped to a skimming tank for removal of coarse sacs. Then the temperature of this juice is lowered to 34 F. in cold-wall tanks and held as cut-back juice for the concentrate.

Pulp-free juice from the first finisher will be pumped to a balance tank and then to a vacuum deaerator. Ammonia-jacketed tubes will continuously cool the deaerated juice to 40 F. and the juice will flow to balance tanks supplying the two vacuum evaporators. These evaporators are continuous, single and triple effect, falling-film type. Evaporation takes but 5 min., at 60 F. Latent heat will be supplied by condensing hot ammonia gas from refrigeration compressors, and these compresssors also will supply the cooling for the water-vapor condensers.

Concentrated to 58 percent solids, the juice will be pumped to cold-wall tanks and adjusted with pulpy single-strength cut-back juice to 41.5-42.5 percent solids for orange juice and 38.5-39.5 percent for grapefruit juice. The temperature is lowered to 26 F. during blending.

Blended juice will be pumped to cold-wall balancing tanks supplying Votators, which slush-freeze the juice to 17 F. for vacuum filling into cans. An airblast tunnel (–30 F.) will reduce the temperature at the center of 6-oz. cans to 0 F. in 1 hr.; for 32-oz. cans, 2 hr. will be required. The hard-frozen product will then be cased and stored at –15 F.

Building Construction

The single story extension is 300 ft. long by 100 ft. wide. The ceiling is 40 ft. high at the highest point. Four rooms divide the building as follows: The cold storage room, the

barreling-out room (where finished products are processed and handled), the evaporating equipment room, and the compressor room.

Excellent construction economies worked out by Holmes and Narver, Consulting Engineers of Los Angeles, are much in evidence. The 5-inch walls are of light Gunite supported by a light steel frame construction.

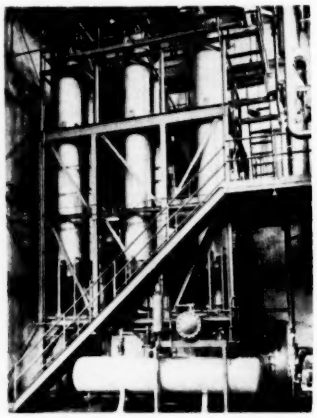
Insulation Foundation Omitted

An estimated $10,000 was saved by laying the 75x100 foot cold storage room floor without insulation. A 3-inch bed of crushed rock constitutes the sub-floring with the usual insulated foundation omitted except for a 3-inch boundary around the floor's edge. Operating costs in the low temperature room are expected to be only slightly higher as a result of the omission of the insulation because even with insulation the ground beneath the refrigerated room will become cold eventually.

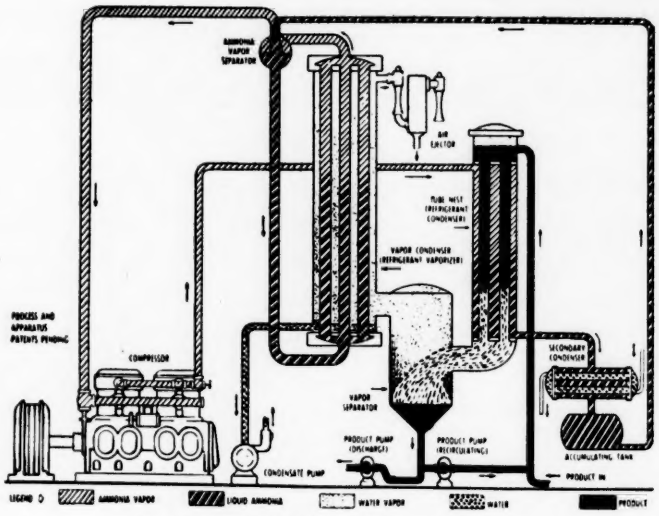
The initial savings in insulation cost is intended to balance off any higher operating cost. These costs are measured in terms of temperature ratios by a nine foot temperature well sunk through the flooring.

Drainage Facilities, Fans, Lights

As constant hose flushing is necessary, complete drainage facilities were provided in this floor, designed with a slope of one-quarter inch to the foot toward the center of the room.



Part of the half-million dollar plant expansion for California Fruit Grower's Exchange, Ontario, California is a Mojonnier Lo-Temp Evaporating Unit capable of doubling production of frozen citrus concentrate at that plant.



Flow diagram of the Mojonnier Lo-Temp Evaporator.

High speed exhaust fans installed throughout the twenty foot ceilings of the barreling-out room and the compressor room will provide a change of air every three minutes. Fresh air will come dust-free through oil filters.

Twenty four hanging ceiling lamps furnish the cold room the wide distribution of light necessary in order to deliver the required 10 foot candles at the working plane down between the high stacks of fruit at any point throughout the room. Zoned switching of the lights from a central panel provides for burning in areas only where light is needed. This results in minimizing the generation of heat, a principle so important to the economical operation of a refrigerated room.

The entire forward exterior wall of the evaporating equipment room may be removed to allow the entrance of lofty cranes and other machinery for the installation and maintenance of the huge evaporators, condensers and vapor separators.

Compressor Room

A 4161 volt 3-phase 700 hp. York compressor is located in the compressor room and will operate the Majonnier system through automatic controls. Cold storage and process cooling is supplied from a Vilter W type 6 cylinder 250 hp. compressor. Space in the compressor room has been left for adding two more of the larger units plus several smaller high voltage motors as they are needed.

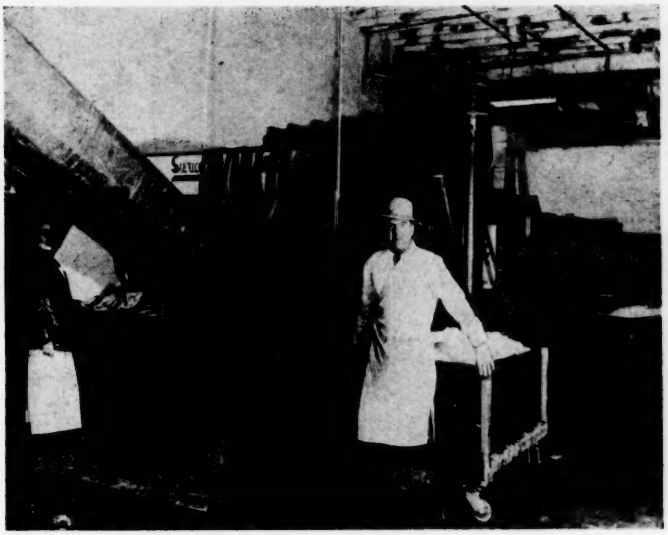
The Mojonnier lo-temp evaporator makes a new approach to the condensing process. Instead of employing steam for the source of heat as commonly used, a new cycle has been created in which secondary compression apparatus controls the heat flow. This compressor equipment in the secondary cycle functions as a heat pump to recycle latent heat and obtain the economy of recompression evaporation.

United States Cold Storage Corp. Reports Earnings

EARNINGS of the United States Cold Storage Corporation and subsidiaries in 1949 were adversely affected by the operation of its Kansas City egg and soft drink division, E. M. Dodds, president, reported. Cold storage operations at the Chicago, Dallas and Detroit plants also failed to produce a volume comparable to 1948. Cold storage stocks generally were low throughout the year. The market for egg products was severely disturbed in the last quarter by unpredictable changes in the price support program of the government, Mr. Dodds said.

Increased demand for freezer space the latter part of 1949 enabled the company to start 1950 with a substantially larger tonnage in storage as compared with a year earlier.

Gross income from warehousing was $3,002,082 against $3,217,116 in the previous year. Sales of egg products, beverages and ice were $4,732,-563 against $5,041,884. Net profits for the year were $365,102, equal to $3.79 a share on the common, compared with $614,340, or $6.55 a share, a year earlier.



The receiving end of the Stericooler where the chickens are chilled to low temperature a few minutes after being killed. President Panattoni leans against a cart of ice used to refrigerate the chilling unit. Instruments guide the ice supply operations so that the chilling goes on at maximum speed which is suited to the type and size of the birds.

ICE QUICK CHILLS POULTRY

Ice water spray is used to chill poultry quickly. Now it is only a matter of minutes from live chickens in the coop to chilled birds ready for distribution or packing.

A NEW program to speed chilling of its products has brought numerous benefits to the American Poultry Co., San Francisco. The operations of the company are carried on in a large building in the city, not far from the famous Embarcadero where supplies of live poultry conveniently reach the plant and the distribution of dressed products through local and other markets is facilitated.

The chickens have been through the ice water spray. Here they are unloaded at low temperature and placed briefly on racks to drain, before packing for shipment or local distribution.

Production which reaches a volume as great as 1500 chickens per hour is set up on two floors. On the second floor the birds are killed and the feathers are removed by machines. Then pin feathers and others remaining are pulled by hand before the birds pass through a singeing and washing operation. All this is mechanized on a conveyor line under rapid and continuous operation.

Then the poultry passes down a chute to the first floor where it is placed on the conveyor belt of the Stericooler shown in the illustrations. This equipment constantly drenches the poultry with an ice cold spray which quickly brings the birds down to 40 degrees or less. An electric warning tells the orerator when it is necessary to add more ice to keep the temperature in the desired range. The crushed ice, with its ability to chill water at amazing speed, always keeps up with the load, no matter how rapid the production.

President C. P. "Pat" Panattoni who has had long experience in poultry processing, told the Union Ice Co. representative that this method of chilling poultry has many advantages. He said it is not only more

sanitary but saves labor and does a better cooling job with less handling of the chickens. It doesn't mash or damage the chickens and improves the product. According to Mr. Panattoni, the new ice refrigerated chilling equipment has brought much favorable comment from customers and has helped to increase sales.

Active in the industry since 1922, Mr. Panattoni remembers when California was an importer of poultry but since that time, production of poultry has multiplied a number of times and California products are shipped all over the country. His present operation was established in 1936 and has grown with the industry. The American Poultry Co. handles all types of chickens as well as squab and turkeys. As Mr. Panattoni observed, they process practically everything that has wings.

The genial president of the firm is an enthusiastic demonstrator of the operation of his poultry chilling equipment. He chatted about the various features of it until the warning light called for more ice. Then he demonstrated how a few scoops of ice would immediately bring the temperature of the water sprays to the desired point. After chilling and a brief draining on racks, the poultry is packed for delivery nearby or for more distant shipment. The latter is packed in crushed ice. The excellent quality of the poultry is evident even to the casual observer. It is really fresh in appearance with the "bloom" the dealer and well informed consumer always look for.

Icing Service Publicized

ASIGNED feature article, with pictures, on the front page of a local newspaper recently gave the Beare Ice & Coal Co. of Jackson, Tenn., valuable publicity. If other ice companies throughout the country could get such news stories in their local newspapers, it would be of untold value to the ice industry.

Under the heading "Ice Helps Shipper Deliver Perishable Goods in Good Condition," this story tells about the company and the icing service it renders. It points out that when the Mobile and Ohio Railroad moved its yards and shops to Iselin in 1927, the Beare Ice Coal Co. built a new icing station in the icing yards to serve the railroad. In succeeding years the car icing platform has been extended to approximately 2,000 feet in length, and now can accommodate approximately 100 cars at one time for reicing.

The Beare Ice & Coal Co., keeping its plants equipped always with the latest ice-manufacturing machinery, bought the first ice crusher-slingers used in this section. These machines crush the ice and blow it inside the railroad cars directly onto the contents. This newer and faster method of icing permits a greater production of vegetables in that section because it keeps them in top condition after harvesting until they reach the market.

The Beare Company built portable ice elevators which are used in icing cars at points away from the car icing platform. By having cars iced at the loading point, the firm has saved the shipper considerable time. This procedure also enables the railroad company to deliver shipments to their destination many hours earlier than otherwise because it does not have to switch the cars back to the ice plant for icing.

Miss Joyce Henry of Jackson, Tenn., receives from deliveryman P. A. Wheatley a package of sized ice for use in her home at 128 Whitehall. (Jackson, Tenn. Sun Photo)

Perishables are protected by ice as they move to northern markets. One of Beare Ice & Coal Co. icing crews at Iselin is shown icing a refrigerator car on the Gulf, Mobile and Ohio Railroad. (Jackson, Tenn. Sun Photo)

Size of Ice Industry

The article comments on the size and importance of the ice industry, particularly with reference to providing a year-round supply of fresh fruits and vegetables to distant markets. The Beare Ice & Coal Co., it concludes, supplies the customers with ice in any desired form—block ice for the refrigerators; taste-free sized ice for cooling beverages, glamorizing foods and freezing ice cream; ice punch bowls for the most elaborate party or other entertainment.

Brine Cooler Bursts Engineer Killed and Five Others Injured

View of brine cooler following rupture which caused death of engineer who was clearing an obstruction in brine piping when cooler burst directly in front of him. Five other men were injured and property damage was estimated at $15,000.

THE rupture of a brine cooler used in connection with a refrigerating system at a packing plant caused the death of the chief engineer and sent five other employees to the hospital. Damage to the building and equipment was estimated at $15,000. Details are given in an article in "The Locomotive," company publication of the Hartford Steam Boiler and Insurance Co.

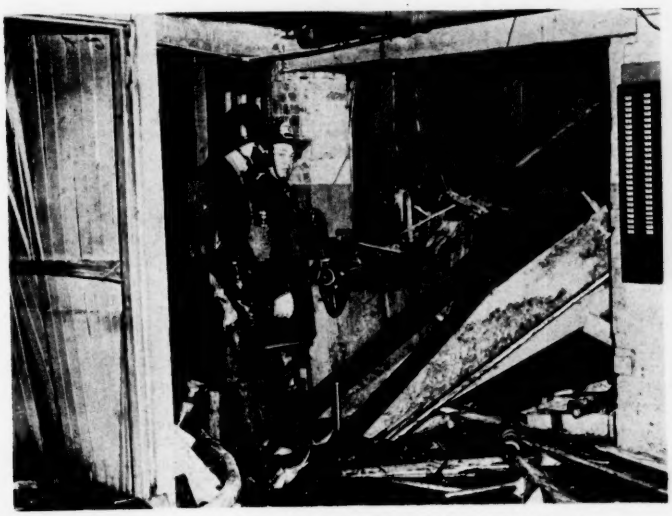
Occupants Escape

Following the bursting of the cooler, ammonia fumes spread throughout the building and nearly one hundred persons escaped down ladders raised by the fire department. Two men who were on the fourth floor jumped 40 feet into a coal pile; they were wearing heavy rubber boots and managed to land in the 10 foot sloping pile without injury.

The chief engineer of the plant was endeavoring to clear an obstruction in the brine piping when the cooler burst directly in front of him. His son, who was assisting at the job, had been sent to the stock room for a gasket a moment before and was far enough away to escape injury.

Blast Wrecks Cooler and Steam Piping

The blast wrecked the cooler, together with steam piping and refrigerating piping in the plant. Several interior walls were badly damaged and windows were shattered. Indications are that the engineer had connected a high pressure steam line to an obstructed brine pipe and that the rupture followed shortly after the steam was turned on. This does not explain, however, the source of the large amount of energy that was obviously released at the time of the explosion, and the real cause of the occurrence was not known immediately.



General view of damage caused when brine cooler burst.

American Service Report

AMERICAN Service Company reported its usual first quarter deficit, reflecting the small volume of ice sales during the winter months, and plant repairs. In addition, the company sets up a provision for income taxes even though there is a loss for the period. Net loss for the quarter ended March 31 was $222,216, compared with $258,750 a year earlier. The decrease in ice sales was $41,011, but other sales, mostly ice refrigerators, washing machines, television and radio sets, frozen foods and sundries increased $138,369 over a year ago. Total sales were $863,594 against $766,236. For the twelve months ended March 31 net profits were $339,550, compared with $503,723 a year earlier, Revenues were $4,972,273 against $5,267,697. H. T. Kraft has been elected assistant treasurer.

Ice Rink To Order with Portable Freezing Equipment

EACH year the "Holiday on Ice" comes to the block-long block-wide Auditorium near the downtown section of Milwaukee, Wis. Preparations for the ice rink are made several days ahead of the opening of the show, as a lot of expert pipe fitting and refrigeration is necessary to assure a good ice surface, on which 115 skaters cavort, with the sharpest of skates.

Since that means a lot of cutting up of the ice surface, the engineer on the job said that during a ten day stay the ice surface is sprayed several dozen times, although the foundation is not disturbed, as the skaters' do not dig down very deep. When the original layer of ice is put on the rink, the crew works all night. When a good layer of ice is frozen, colored paint is sprayed into the required design, with another layer of ice above that, for glamour, the engineer says.

The rink at the Auditorium is about 65 feet wide and 140 feet long, and the man with the hose keeps spraying as you would keep a lawn moist, each separate spraying taking about fifteen minutes. Then the operator waits about half an hour and does some more spraying. He has to watch for leaks around the sides of the rink, where saw dust determines the edge for freezing. Not much water goes beyond the sawdust line, it was noticed.

The big job is the laying of the piping on the floor of the rink, and this consists of hundreds of feet of ½-in. pipe, carried from city to city on a trailer. The pipe is laid in 2x20 ft. sets, the labor being provided by local contractors, who furnish men who make tight fittings, to avoid leaks, which might spoil the surface.

A Worthington compressor on a large truck, parked outside of the building not far from the rink, furnishes the refrigeration. Brine is used, cooled to 14 F., this being pumped from the compressor through a four inch hose to the rink, the refrigerant being sent through the piping, the latter being imbedded in sawdust and sand on the floor. While it takes a couple of days to install the piping and get the brine into the piping, the actual freezing time to freeze the original layer of ice to a thickness of less than one inch takes only about two hours. After that, according to the engineer, it is only a matter of keeping the top surface in condition for the skaters, crews being kept busy constantly to watch the condition of the surface.

On the floor of the rink, before the piping is installed, a four inch layer of sand is put on, the sand being soaked and frozen. Once the main layer of ice is formed, spraying for new surfaces, sometimes only in spots, can be accomplished during intermissions, as well as just before the show starts, as such new surfaces take only about 15 minutes to freeze to a proper hardness.

The engineer estimates that about 12 tons of frozen sand are used for the foundation, as well as nearly 50 cubic yards of sawdust, the later being packed around the piping, with a four inch layer of sand over all of it, before the water is turned on for the freezing job.

Arena Addition Expands Capacity

THE new arena addition to the Auditorium will provide a two block long, one block wide, sports arena and convention hall. It is expected that ice shows and sports events using ice will use the Arena rink instead of a built-up rink using specially installed piping. The Arena and the older Auditorium are attached and can be used as one continuous floor, a street having been vacated to allow its construction. The two combined buildings provide a structure two blocks long and one block wide.

Permanent refrigeration piping was installed under a terrazo floor while the building was under construction. The skating rink is 28 ft 8 in. wide and 202 ft 4 in. long, with about 60,000 lineal feet of 1 inch black steel pipe, resting on T-irons with 3-inch centers.

Brine will be sent through the piping when ice affairs are to be held, instead of the method used in the Auditorium where special piping is laid on top of the floor for each separate event. At the Arena, hockey and other ice events will be held, as it is really a sports arena. That was the addition's name originally, but as that might be misleading, the name "sports" was dropped and it is called the arena.

Two Worthington compressors are used, each of 100 tons ice making capacity, each driven by 100 hp synchronous motors, on three phase, 60 cycle 208 volt circuit. The compressors are of the ammonia type, with three evaporative condensers. The following additional equipment has been installed: one brine tank of 1,600 cu. ft. storage capacity; three 80 ton ammonia condensers; 19 thermometers, including one wet bulb and one hydrometer for calcium chloride brine and special control equipment for the motor driven compressors. The refrigeration equipment was installed by Buildice Co., Chicago.

The new Arena was expected to be ready for dedication about Easter time, but no ice show is contemplated during the first few months. William Maas is manager for both the Auditorium and the new Arena, these two structures being connected, a street having been vacated to make this a two-block long building.

Refrigeration Produces Better Spinach

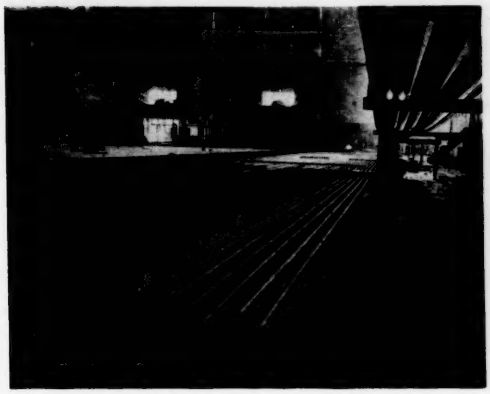
BETTER fresh spinach, it might be said, will be "in the bag" if the results of U. S. Department of Agriculture research on prepackaging fresh vegetables are adopted by industry. The "short shelf life" of the washed and trimmed product put up in transparent containers, according to the investigators, is principally the result of bacterial soft rot—which can be pretty well controlled by spinning the leaves longer in the centrifuge dryer and by using more refrigeration.

Various types of transparent films were used in the tests, some of permeable texture and some perforated for ventilation, but there was little difference in the results from all these. Different chlorine compounds were tried in the wash water, but no advantage developed from that. Also, silver-treated bag material was of no help in stopping the rot. The work is being done under the Research and Marketing Act.

Tests of drying in one packing plant showed that spinning for ½ minute (a time common in commercial packaging) reduced weight 13.2 percent, for 1 minute 21.8 percent, and for 4 minutes 27.2 percent. The longer spinning, resulting in more complete removal of water from the leaves, cut decay and lengthened shelf life. Spinning for much longer periods to remove only a little more water was of no advantage, but the extra treatment didn't seem to hurt the spinach. It was found that refrigeration in the store is the best means of controlling decay and increasing shelf-life.

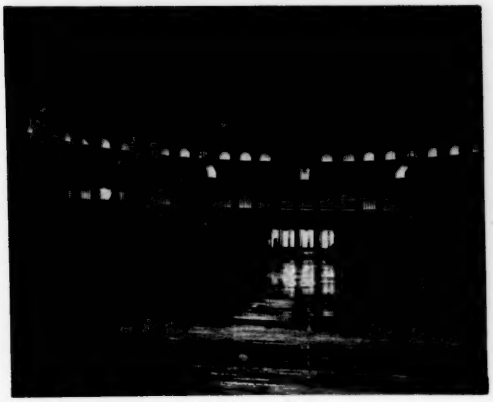
New Views of Auditorium and Arena Ice Floors Milwaukee, Wisconsin

Below: Piping layout in new Milwaukee Arena. Twelve miles of refrigerating piping will supply an ice floor for hockey games and ice shows. —Photos by Milwaukee Journal.



Above: The refrigerated piping has been covered with concrete. A two-inch slab was poured in one operation starting Wednesday at 8:00 a.m. and the job was completed Thursday at 5:00 a.m. Paper shown covering most of the floor aids in curing process.

Below: Attendant with water-hose builds up the ice floor for "Holiday on Ice" show at Milwaukee Auditorium.



Above: One of the scenes in the "Holiday on Ice" show in which skaters cavort in fancy costumes.

Raising Humidity With Steam

T. H. REA Armstrong Machine Works

AT FIRST the idea of steam in a cold storage room might make about as much sense as putting anti-freeze in an ice machine. The heat content of the steam would seem to offset the refrigeration effect.

Actually the temperature rise is entirely negligible. A meat storage room for example could well use steam humidification to prevent weight loss and reduction in quality due to the meat giving up large quantities of moisture to dry air. At today's meat prices per pound the saving in weight and maintained quality would be considerable.

7000 divided by .237 = 29,535 cu. ft. humidified by 1 lb. of steam.

29,535 x .080 lbs. of air humidified.

78.4 Btu ÷ 2,362.8 = .0332 Btu for each lb. of air humidified.

.0332 ÷ .238 (Specific heat of air) = .14 F. temperature rise for a 10 percent increase in relative humidity at 35 F.

To get the same humidity increase with a water spray unit, because of the low temperature, a lot of 35 F air would have to be circulated to evaporate the water—on the order of 3750 cu. ft. per min. for humidifying 29,000 cu. ft. of space from 80 to 90 percent at 35 F assuming one air change per hour. The necesary equipment would be expensive to install and expensive to operate. An Armstrong C-2 steam humidifier would do the job better and could handle 100,000 cu. ft. of space with no trouble.

On second thought, it looks like steam humidification for cold storage rooms is a pretty fair idea.

For other temperatures in the 32 F to 150 F range, a ten percent increase in RH will produce temperature rises as shown in the table tabulating temperature rise for increase in relative humidity with steam at specified pressures.

Supposing you want to know the temperature increase produced by steam humidification raising RH from 20 to 50 percent. Room temperature 75 F. Steam pressure 10.3 psig. From the table under 10.3 psig column, the temperature rise for ten percent increase at 75 F would be .521—for a 30 percent increase, 3 x .521 or 1.563 F total temperature rise.

Even several air changes per hour would cause no temperature change because as fresh air enters the room stale air leaves. Actually, if the dry bulb temperature is thermostatically controlled, there will be no temperature increase whatsoever. Instead, the thermostat will cut down on the steam pressure so that the combined radiation and humidification heating effect will total the desired temperature.—ARMSTRONG MAGAZINE.

TEMPERATURE RISE FOR 10 PERCENT INCREASE IN RELATIVE HUMIDITY USING STEAM AT PRESSURES SPECIFIED

Air Temp	Pressure of Supply Steam 2.3 psig	5.3 psig	10.3 psig	Cu. ft. of air in which 1 lb. steam will produce 10% humidity increase.
32 F	.124 F	.1302 F	.136 F	33,000
35 F	.141 F	.147 F	.154 F	29,100
40 F	.167 F	.175 F	.183 F	24,100
50 F	.226 F	.237 F	.249 F	17,060
60 F	.306 F	.320 F	.340 F	12,080
70 F	.406 F	.426 F	.455 F	8,650
75 F	.465 F	.489 F	.521 F	7,375
80 F	.528 F	.554 F	.595 F	6,300
90 F	.671 F	.700 F	.761 F	4,567
100 F	.839 F	.890 F	.960 F	3,500
110 F	1.022 F	1.090 F	1.190 F	2,660
120 F	1.222 F	1.310 F	1.447 F	2,019
125 F	1.330 F	1.430 F	1.580 F	1,790
130 F	1.430 F	1.550 F	1.715 F	1,580
135 F	1.550 F	1.690 F	1.880 F	1,395
140 F	1.645 F	1.80 F	2.020 F	1,233
150 F	1.850 F	2.06 F	2.320 F	975

But let's work out the facts. Supposing the humidity in this meat storage room were to be raised from 80 to 90 percent. What would happen to a 35 F. room temperature if steam at 2.3 psig (pound per square inch gage) with a temperature of 219 F. were admitted. The temperature of the room would rise 1/7 of a degree, which is not worth considering. Here's what happens:

The Problem Solved

Total heat in 1 lb. of steam at 2.3 psig ..... 1153.1 Btu
Total heat in 1 lb. of steam at 35 F. ..... 1074.7 Btu

Heat added to air .... 78.4 Btu

Now saturated air at 35 F. holds 2.37 grains of moisture per cu ft. To raise the relative humidity from 80 to 90 percent requires the addition of .237 grains per cu ft.

1 lb. of steam—7000 grains.

International Conference on Heat Transfer Development

POSTWAR heat transfer development will be the theme of an international discussion to be held in London, September 11 to 13, 1951. Plans for participation by engineers in the Western Hemisphere are being arranged by the Joint Committee on North American Participation, which consists of representatives from The American Mathematical Society, American Institute of Chemical Engineers, the American Chemical Society, The American Society of Refrigerating Engineers, American Society of Heating and Ventilating Engineers, American Society of Mechanical Engineers, American Institute of Physics, American Institute of Mining and Metallurgical Engineers, The American Physical Society, The Society of Automotive Engineers, The Institute of the Aeronautical Sciences, and The Engineering Institute of Canada. The American Society of Mechanical Engineers has charge of coordinating administrative details.

Participation by British and European engineers is being coordinated by the Institution of Mechanical Engineers with the cooperation of 30 British societies and the engineering and technical societies of Australia, India, New Zealand, South Africa, Belgium, Denmark, France, Holland, Norway, Sweden and Switzerland.

Subjects for Discussion

Preliminary plans indicate that the following subjects will be among those discussed: Recent information on physical properties of gases and gas mixtures pertinent to their heat transfer characteristics, measurement problems related to heat transfer, mass transfer and heat transfer, heat transfer by sweat and film cooling, condensation at high speed flow, heat transfer to liquid metals, the analogy method for the solution of conduction problems.

The
Practical Refrigerating Engineer
NATIONAL ASSOCIATION PRACTICAL REFRIGERATING ENGINEERS

E. T. Quinn, Los Angeles, Calif.
President National Association Practical Refrigerating Engineers

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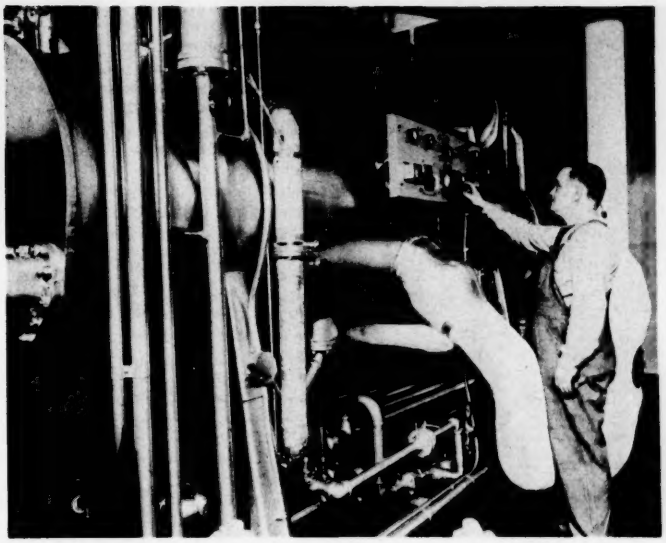
Plant Instruments—Their Uses and Limitations

W. T. MILLER,
Professor of Mechanical Engineering.
Purdue University



The men who operate refrigerating plants must depend upon instruments to determine what is going on in the system. To perform their tasks these instruments must be suited to the job, accurate and properly installed. Professor Miller describes the operation, range and application of numerous instruments and tells how they are used to best advantage in the plant.

MAN is the only animal on earth that measures and records such things as time, distance, pressure, and temperature. Other animals, birds, insects, and fish often recognize and respond to slight changes in pressure and time but do not measure them. They accurately judge distance and temperature but do not measure or record them.

Time is measured by the calendar which is graduated in years, months and days; the clock which is graduated in hours and minutes; the watch which indicates time in hours, minutes, and seconds; the stop watch which splits the seconds into one hundred parts; and the ocilograph which stretches a second over a chart two feet long. The applications of time instruments are generally undestood and the selection of the proper instrument is based on the accuracy required. Only seasoned race fans would be tempted to select the calendar to measure the time required for a horse to run a mile and a quarter. They would not use a clock to time a man running one hundred yards, and they would recognize the limitations of a stop watch for determining the speed of a high velocity bullet.

Presented to the 40th NAPRE convention.

Distance is measured by cyclometers, tape lines, rules, micrometers, and electronic devices which divide one inch into one million parts. The selection of an instrument for measuring distance is influenced by tolerance of error and misapplications do not often occur. The degree of accuracy for the cyclometer may be rods, yards, or feet. The tape may indicate distance to a quarter of an inch, while the rule provides an accuracy of one sixteenth of an inch. The scale is used for tolerances of one sixty fourth of an inch and the micrometer may be read to one ten thousandth of an inch.

Instrument for measuring pressure include the Bourdon gage, the manometer or U tube, diaphragm or bellows gage, and for very close pressure determinations the micromanometer.

The mechanism of a Bourdon tube gage. The tube is fastened to the central column which transmits the pressure into the tube. The tube motion resulting from pressure changes is transmitted through adjustable linkage to the pointer.—Marsh Instrument Co. Photo.

The most commonly used pressure gage is the Bourdon. It consists of a tube of elliptical section bent to the shape of an arc of a circle. One end of the tube is fastened to the case and is open to the pressure to be measured, the other end is closed and by means of a linkage is connected through a gear segment and pinion to a hand which moves over a dial face which is graduated in the units of pressure desired. The pressure tends to make the tube section circular which in turn causes the bend in the tube to straighten and that movement of the free end of the tube is magnified by the movement of the hand over the dial.

The Bourdon gage indicates pressures from atmosphere. The pressures above atmosphere are usually indicated in pounds per square inch, while pressures below atmosphere are indicated in inches of mercury of vacuum. Special gages may have multiple scales showing pressures and corresponding saturation temperatures.

In the selection of Bourdon gages, care must be taken that the tube be made of a material that will not be injured by the gas or liquid that will come in contact with it. For instance, for ammonia the tube should be of steel, not brass.

Accuracy of Bourdon Gage

The accuracy of a Bourdon gage is affected by extreme temperature changes at the tube. Therefore the tube must be protected from high temperature gases by inserting a liquid filled siphon or pig tail between the tube and the gas. For reliable service the Bourdon gage should be checked or calibrated frequently. This may be done by comparison with an accurate test gage or by means of a dead weight tester. A constant error may be corrected by changing the position of the hand. Increasing or decreasing errors may be corrected by adjustment of the linkage.

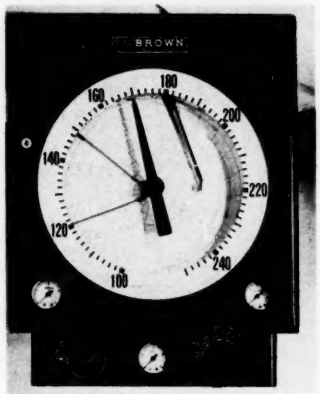
The accuracy of the Bourdon gage is limited to approximately one half pound per square inch or one inch of vacuum.

For moderate pressures diaphragm gages may be used. They consist of a chamber faced with a flexible diaphragm which flexes with slight changes of pressure in the chamber. The movement of the diaphragm is transmitted to an indicating hand by means of suitable linkage. By the use of large area diaphragms a highly magnified scale may be used with a high degree of accuracy. These gages are popular for indicating very low pressures such as draft, etc.

Low pressures are measured by manometers which are of the following types. The U tube, inclined manometer, and micromanometers. All are liquid filled and indicate pressures from atmosphere, by indicating the height of liquid column which the pressure will support. The scales are usually in inches of water or inches of mercury depending on the liquid used. The U tube accuracy is limited to one tenth of an inch, while the inclined tube manometer may be read to an accuracy of five thousandth of one inch. The barometer of the mercury column type is an example of the U tube. Micromanometers are used when extreme accuracy is desired and will indicate pressures as low as one ten thousandth of an inch of water.

Diaphragm and bellows type gages are also used to indicate low pressures. Their scale graduations are usually expressed in inches of water. The aneroid barometer is an example of the diaphragm gage.

All types of pressure gages with the exception of the manometer, may be adapted to recording application when combined with clocks, pens, and charts.



Remote installed temperature recorder. Thermocouples which can be installed at considerable distance are connected to the instrument through small wire. This instrument also combines control functions.—Minneapolis Honeywell Regulator Co. Photo.

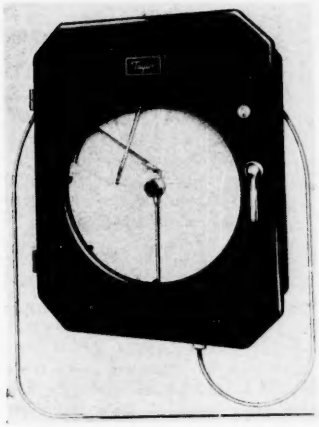
When pressure gages are installed, it should be remembered that the gage indicates the pressure at the point it is located. Therefore if the gage is located at a level different from the point at which the pressure is to be known, the gage reading must be corrected for the pressure created by the column of liquid or gas in the gage line between the gage and the pressure point. This correction may be plus or minus depending on whether the gage is below or above the pressure point respectively.

Temperatures are indicated by thermometers, thermocouples, and pyrometers.

The most common type of thermometer is the direct reading mercury in glass type graduated in degrees Fahrenheit. The mercury thermometer is limited to a temperature range from –40 F to 1000 F. Mercury

freezes at –40 F and boils at 675 F, however the boiling point is raised by filling the space above the mercury with hydrogen under high pressure. Mercury and glass thermometers may be armored by means of a metal tube to reduce the probability of breakage. The mercury bulb may be inserted directly into the substance and the temperature at that point will be indicated. The bulb may be separated from the substance by means of a thermometer well which is a tube permanently located in a pipe under pressure.

The accuracy of the mercury and glass thermometer depends on the uniformity of the tube diameter. Carefully graduated thermometers of this type may be read to one fourth of a degree F.



A mercury actuated temperature recorder which may be located as much as 100 ft. from the temperature sensitive bulb.—Taylor Instrument Co. Photo.

Inaccuracies occur due to faulty installed or leaking thermometer wells. Thermometer wells with large external surfaces exposed will dissipate heat and cause a low reading. Leaking wells in liquid lines may cause a low reading due to evaporation, or a high reading due to superheat resulting from wire drawing effect. Thermometers with metal scales may be inaccurate because of the expansion and contraction of the scale with changes in temperature.

Thermocouples have the advantage of wide range and are adaptable to installations requiring remote readings. This is true with all electrical temperature measuring devices.

Remote indicating and recording temperature measuring instruments are usually combinations of clocks, pens, and charts with changes in temperature transmitted to the pen and scale by means of pressure indicating devices. The thermometer bulb is connected to the Bourdon tube, bellows, or diaphragm by means of a hollow wire. There are three types of such instruments, the liquid filled, vapor pressure actuated, and gas filled. The liquid filled instrument usually incorporates the Bourdon tube and the tube, wire, and bulb are filled with liquid. The expansion of the liquid with temperature rise increases the pressure in the tube and the resulting movement is recorded on a calibrated scale. Temperature of the tube and connecting hollow wire affects the accuracy of the instruments if the wire is longer than 25 feet and if there is an appreciable fluctuation of temperature at the tube. The inaccuracies may be reduced by the addition of a duplicate tube and wire filled with liquid connected in opposition to the thermometer mechanism. It is important that liquid filled instruments be calibrated for installation conditions with particular care regarding difference in elevation between the instrument and the remote bulb. Liquid filled thermometers are not affected by changes in barometric pressure.

The vapor pressure actuated instrument has the bulb partially filled with a volatile liquid. The vapor fills the remaining space as well as the wire and tube or bellows. Since the vapor pressure depends only on the temperature of the liquid in the bulb, the instruments accuracy is not affected by the temperature of the wire or bellows. It is important that the instrument be installed with the bellows at a higher elevation than the bulb. The accuracy of the vapor pressure actuated instrument is affected by changes in barometric pressure.

The gas filled instrument has the bulb, wire, and bellows filled with gas. This instrument is subject to the same inaccuracies as the liquid filled instrument, and in addition is affected by barometric changes.

Flow meters are usually based on the principle of pressure conversion. That is, conversion of static to velocity pressure by restricting the flow area and thus increasing the velocity of the fluid. The flow is proportional to the reduction in static pressure at a point of known flow area. The mechanism consists primarily of accurate pressure differences, and the precautions are the same as must be exercised in the application of pressure gages. Since two gages are used, it is important that they be at the same elevation, and that any liquid column above them be of exactly the same height. It is important that the instrument be calibrated for the density of the fluid flowing at the orifice or nozzle. The density varies with pressure, therefore the instrument is inaccurate if there is an appreciable fluctuation of pressure in the line.

The proper use and application of plant instruments are just as important in the operation of a plant as the compass and other navigation instruments are in the direction and operation of a ship at sea. Without them one has no assurance of where the destination is until the arrival.

Annual Convention at Los Angeles November 28–December 1

THE 1950 convention of the NAPRE previously announced for Los Angeles will be held on the last 3 days of November and conclude on Dec. 1. Headquarters for this 41st annual meeting will be in the Hollywood Roosevelt Hotel.

Los Angeles Chapter which will be hosts to the meeting has been working and preparing for a considerable period to welcome the members to this convention and make their attendance most enjoyable. Collaborating in the direction of this work are President Emmett Quinn and Regis Gubser, General Chairman of the Convention Committee. Recently these two were joined by Secretary Emerson Brandt in an inspection of the convention facilities of the Hollywood Roosevelt Hotel. They found everything well suited to a convention of the size and type of the NAPRE meetings.

Both Quinn and Gubser emphasized that the location of the convention will appeal especially to the wives of the members. This is not only because of the accommodations provided by the hotel, but also because they will find so many opportunities of enjoyable entertainment nearby. President Quinn declared that they were expecting members to save their vacations this year until convention time. Then the convention

and its related events will form the highlights of a really fine vacation in Southern California.

The educational program will be supplemented by inspection trips so that the attendants will learn, see and do what they want. Practically every type of refrigeration application is represented in the Los Angeles area. Furthermore recent expansion has permitted equipment and installations of the latest type. Inspections are being arranged on a small group basis so that the time and attention given by the visitors to any particular installation will be proportional to their interest in it. Mr. Gubser emphasized this point. He remarked that on a recent convention trip he picked up enough ideas in one plant visit to pay for several such trips.

The educational program as usual will combine local speakers with those from other sections of the country to give good coverage of the different applications of refrigeration and operation of greatest interest to the membership. The local committee, as well as the national educational committee and the officers have been participating in the preparation of this program. A number of subjects are now being arranged. When announced this program will round out the many excellent reasons for attending the 1950 convention at Los Angeles.

N A P R E

Question Box

H. G. Venemann, Professor of Refrigeration, Purdue University and chairman of NAPRE Educational Committee, answers members operating problems monthly in this column. Send questions to Chairman H. G. Venemann c/o Purdue University, West Lafayette, Indiana.

Half Capacity Operation

Question No. 849: We have a 30 hp. condensing unit including V-belt drive and shell and tube condenser. Now it is desired to use this unit on a 15 hp. air conditioning job. The compressor speed can be reduced by changing the pulleys. It there anything else we should do to get the best out of this unit at reduced capacity?—J.M.S.

ANSWER: When one speaks to me about a certain horse power condensing unit I begin to boil inside, for to me it is one of the most senseless and meaningless terms ever imposed upon the refrigeration industry. It is as bad as the term "Boiler horsepower." The most important processes involved in a refrigeration system are heat absorption and heat rejection. The power process is small in comparison with the heat transfer processes, and the measure of a refrigerating system is and should be in heat units—not in power units.

There is nothing in the statement "30 hp condensing unit" which gives one any idea as to the refrigeration capacity of the compressor.

One manufacturer of air conditioning units has the following ratings on a so-called 30 hp Freon 12 condensing unit when the compressor operates at 410 rpm.

No ratings were given at evaporating temperatures less than 25 degrees F, but at standard ton conditions of 5 degrees and 86 degrees it would be about 17.5 tons and its power requirement would still be 30 hp. From these figures one can see that the horsepower of the unit does not give any indication of what the unit will deliver in the way of refrigeration unless the operating pressures are specified.

When you speak of reducing the speed of the compressor of a 30 hp condensing unit so that it will accomodate a 15 hp air conditioning job I must assume that the operating time and operating pressures are the same as at the original speed. With this assumption I may then conclude that the refrigeration load has been cut in two, and that the capacity of the condensing unit has likewise been cut in two. With this understanding of the situation, I am now in a position to give you an answer to your question.

After you have reduced the speed of the compressor you will have an oversized motor and an oversized condenser. The efficiency of the motor will be reduced only slightly—from perhaps 90 percent to about 86 percent. The oversized condenser will be beneficial to you enabling you to maintain a favorable head pressure with the available water.

In order to obtain the most economical results you should be careful to select the proper evaporator. If there is not too much difference in cost, I would buy an oversized air diffuser unit. This unit should operate on not less than 40 degrees F evaporating temperature, and have sufficient number of rows in depth as to take care of the maximum latent heat load. In all probability the present motor will not be suitable for automatic operation unless the compressor is equipped with an automatic starting by-pass or unloader. The selection of the low side equipment is equally as important as that of the condensing unit, and for economical operation it should be oversized rather than undersized.—H.G.V.

Capacity		Pressures Psig		Temperature, F	
Tons	Btu per hour	Suction	Discharge	Evaporating	Condensing
22.7	275,000	24	136	25	110
27.7	320,000	24	107	25	94
34.1	410,000	37	132	40	108
39.1	470,000	37	103	40	92

Stainless Steel Condenser Tubes

Question No. 848: Why are refrigerant condenser tubes not made of stainless steel? I realize they would be more costly, but at the same time the stainless steel tubes would be free from corrosion and roughness. Possibly scale and slime would not adhere so readily to their smooth surface. We would appreciate authoritative analysis in regard to using stainless steel tubes in condensers.—R.V.C.

ANSWER: Stainless steel tubes have been used for condensers in special cases. I understand that the U. S. Navy has tried them for use in sea water, and that the results did not justify the extra cost. I discussed the problem with two of our metallurgists both of whom agree that there is no reason why stainless steel tubes should not be used if the proper alloyed steels were selected. Copper-nickle steel would not be advisable for ammonia condensers, although it would not be attacked by any of the Freons. They suggested that the mineral content of the condensing water be investigated before selecting the kind of stainless-steel to be used. One engineer experienced in the use of stainless steel coolers and evaporators for dairy purposes ventured the opinion that the capacity of a condenser

would be reduced if wrought iron or steel tubes were replaced with stainless-steel. The principle objection of course is the high cost.—H.G.V.

Conversion to Flooded Operation

Question No. 847: We have a water defrost unit cooler in a freezer storage room. The unit is operated with top expansion of ammonia controlled by a thermostatic expansion valve. The coils are connected into horizontal headers across the top and bottom. Would it be possible to reconnect a unit of this type for flooded operation and get more capacity out of the unit?—C.R.D.

ANSWER: It should be a simple matter to change the inlet and outlet connections to your unit cooler so as to feed into the bottom, and in all probablity you would get more capacity out of it. This would not however assure you of flooded operation as we know it today. In order to get flooded operation you would have to have a trap or accumulator in the suction line located above the coils with liquid drain back into the lower header. If you changed to a bottom feed without the accumulator and liquid drain you would, no doubt, have more wetted coil surface in operation than at present and slightly greater capacity more of the time.—H. G. Vennemann

NEW QUESTIONS
Answers in June Issue

Parallel Operation

Question No. 850: In our plant there are two ice freezing tanks. It was originally designed to produce thirty tons of clear ice every twenty-four hours, using a tank holding 432 cans, freezing 300 lb. bars. Two 8 in. x 8 in. compressors were installed. The evaporator is controlled by a high side float making this a flooded system. Recently a smaller tank was installed with an additional 8 in. x 8 in. compressor. This tank is about half the size of the original. It holds 272 cans, same size as larger tank. The system is entirely cross-connected.

I have at times been unable to keep brine temperatures in each tank anywhere near equal. The consensus of opinion locally, is the tank having the lowest temperature will rob the tank having the higher temperature. In other words, the ammonia will flow to the coil of the tank with the lower temperature. I don't agree with this and would appreciate your opinion on it. What is the best way to operate these two tanks?—C.R.S.

Columns and Floor Insulation

Question No. 851: A building we are constructing has the usual method of floor construction which consists of a 4 in. concrete sub-floor with corkboard insulation laid on it. Then a concrete finish floor 4 in. thick will be laid on the cork. A row of 4 in. pipe columns down the center will support the ceiling.

The room is designed for -15 F freezer service and the cork in the floor is 8 in. thick. What is the best practice in setting these columns, should they be set on the sub-floor and extend up through the insulation and finish floor? Or should the columns rest on top of the finish floor?—T.J.M.

Rain and Evaporative Condensers

Question No. 852: Evaporative condensers are frequently located on the roof or some other place outside. Does rain have any effect on the capacity of these evaporative condensers.—H.W.M.

News Notes and Activities of the Chapters

Seattle

BY CHESTER BERTUS

THE featured speaker of the April meeting was William Mason of General Controls Co., who talked and showed slides on some of the products of his company. Topics discussed were construction of expansion valves, their place in the refrigeration system and their advantages over hand controls. The functioning and installation of external equalizers on large tonnage valves was explained. It was emphasized that strainers provide good insurance for continued valve operation.

Humidity controls and their place in food storage business were explained. Mr. Mason also discussed boiler water lever control. Solenoid valves have come into wide use in the refrigeration business and their operating principles and construction were explained along with that of motor operated valves and explosion proof valves.

The new ice bank relay which was developed in Seattle and patented by General Controls Co., proved to be quite interesting. Mr. Mason explained that this valve was developed to control the build-up of ice in a sweet water storage cooler, but since that time they have found many uses for the relay such as a warning for freeze ups on cooling towers, as well as on various evaporators including fin tubes and bare pipe coils.

The May meeting was held at the YMCA and was preceded by the usual dinner. The special speaker of the evening was Emerson Brandt, national secretary who was on a trip to visit the west coast chapters and work on convention arrangements in Los Angeles. He told about some of the earlier events on the trip and described operations of other chapters visited. The educational work of the association was reviewed and he presented a manual which he had recently prepared to give suggestions on chapter operation and assist the officers and committees in carrying on the program. At the conclusion of his talk there was a general discussion of programs and operations.

In attendance was M. E. Bell recently transferred from Los Angeles Chapter. Mr. Bell had served as president of that chapter and also of San Francisco. He gave ideas on programs and operations developed from his long experience in the association. Frank Knowles, one of the charter members of the chapter discussed its earlier operations and the lessons learned from these experiences.

There was a general discussion on safety and accident prevention in which President Pamment and others described their experiences. The chapter voted to recess during June, July and August and resume meetings in September.

Chicago

BY E. B. JONES

The air conditioning course was completed at the final meetings of the current season. Instructor Eugene Rytlewski discussed maintenance methods and gave details of procedures to keep the system operating properly. Then a review was presented in which highlights from different sections of the course were discussed.

The special speaker at the first meeting of the month was D. P. Nachine, Chicago Pump Co., who discussed the subject "Fundamental Principles of Water and Brine Flow." Mr. Nachine described the relationships between pressure, speed of flow and friction losses. He showed how pumps could be chosen for best operating results and described the systems which would reduce losses to a minimum.

The annual election of officers was held at the following meeting with the election of:

President, Leslie Clifford.
First Vice President, Ed Gaarnas.
Second Vice President, Douglas Benton.
Secretary, Jay R. Watson.
Treasurer, A. O. Clementson.
Sergeant-at-Arms, George B. Hofmann.

N.A.P.R.E. Department

San Francisco

By F. H. McLaughlin, Jr.

Our meeting of March 22 was highlighted by a discussion presented by one of our own members, Dick Kelahan, who spoke about the trials and tribulations of marine cold storage box construction. He told us about his experiences during the course of completing a recent contract where it was necessary to do most of the actual work while the vessel was under way between San Francisco and Los Angeles, and then on the return trip back to San Francisco. The time allowed, by the owners of the vessel in which the work was to be done was very short and was a very critical item in the contract. Mr. Kelahan explained the progress of the job so completely that all of us felt that we were right along with him while the actual work was being done.

During our meeting of April 12 President Marshall Garlinger presented an informal talk on some of the highlights of the transfer of the operation formerly taken care of by the Army Transport Service, and now handled by the U. S. Navy. Since the speaker was formerly a member of the Army Transport Service, he consequently was able to relate several interesting and very entertaining anecdotes that occurred when he was transferred to the U. S. Navy. Several points regarding the operations of the Transport Service and the important part it plays in the national defense establishment were brought out to everyone's interest.

The second meeting of the month was preceded by the refrigeration class which Bill Orton conducted. He discussed temperature, heat and pressure relationships and the interest aroused was indicated by the lively discussion that concluded the period.

National Secretary, Emerson Brandt, was introduced to the meeting by Elmer Ross. Inspired by the presence of other veteran members including Bill Edis and John Hawkins, Elmer really demonstrated his ability on the task assigned. In responding Emerson found it difficult to recognize himself as the person so glowingly introduced in the Ross manner but said he appreciated it as a high point in his trip. Then he went on to discuss some of the highlights gleaned from 16 years of association with the NAPRE and its educational program. He described engineering developments of earlier years which have been revived recently and in some cases characterized as new developments. In conclusion he told about the preparation Los Angeles is making for the 1950 convention and urged all of the members to plan for attendance there.

An illustrated lecture on rust prevention was presented by J. R. Boren, western factory representative of the Rust-Oleum Co. The picture story recounted the development of a rust resistant paint with a deodorized fish oil base. The method of application of the paint was described and it was emphasized that a good coating job can be obtained without going to the expense of complete rust removal before painting. In the question and answer period which followed Mr. Boren was joined by T. H. Pitt, distributor for the paint products in this territory.

It has been reported that President Garlinger has been elected Chairman of the Board of Governors of the Port Engineers Society of San Francisco. The members of this society represent a group that is in charge of vessels along the entire San Francisco water front.

Following the meeting the attendants were invited to the San Francisco Brewing Co. plant by John Herzog. There they inspected the excellent facilities and equipment in the plant and concluded by enjoying the bottled product right off the line.

Memphis

By Charles Conley

A joint discussion of air conditioning and problems related to it was presented by Harry Simpson and Cecil Sullivan at the first meeting of the month. They related a number of interesting experiences they have had in this line of activity.

The new Memphis Safety Code for refrigerating plants was read and explained by Alvis Clay. Formerly the City of Memphis did not have anything to do with the installation, inspection or safety of such plants. Naturally this code has created a great deal of interest and there were a number of contractors and service engineers in attendance at the meeting, as well as the regular members.

Announcement has been made of the change in address of the York Corporation office in Memphis. This office is now located at 727 Dermon Building, Memphis 3. Harry W. Walling is manager of the office. He is a member of Memphis Chapter and a frequent contributor to its programs.

Air Conditioning Maintenance was the subject of the next meeting and was presented by W. L. Drake, chief engineer of Air Temperature, Inc. He detailed what he has found to be the best practice in keeping a plant on the most satisfactory operating basis. It is important, Mr. Drake said, to take the proper precautions and prepare the plant properly for the idle period between operating seasons. Then when the season starts if proper measures are taken for starting the equipment, less trouble is likely to develop.

On the other hand, Mr. Drake pointed out that a number of plants are merely stopped at the end of the season and then started the next year without any real maintenance or care. Frequently troubles begin rather quickly and continue throughout the season. Mr. Drake had a number of illustrations of the Chrysler radial compressor and he explained the operation of the machine from these. Roy L. Schneider, assistant engineer at Methodist Hospital was elected to membership.

An accident while on a fishing trip cost the life of William J. Murrell, engineer for the Tennessee Brewing Co., and a member of the chapter. Mr. Murrell in a small boat was taking large fish nets out to be placed in the river when the boat capsized. Mr. Murrell had been working for the brewing company since the end of the war and had been a member of Memphis Chapter for 4 years.

Pittsburgh

By Otto P. Knoch

At our meeting of April 19, the Educational Committee secured two films. The one dealt with sports and the other on the advantages of a-c welding over d-c welding which proved to be very interesting. After the pictures, a discussion was held as to why they are still selling d-c welding when a-c welding is much more simple to operate and it makes a neater job. It also does not give as great an arc blow as d-c welding. Frank Bennett from Canton, Ohio said they still use the d-c welding outfit. He extended an invitation to the chapter members to make a visit this summer to Canton.

Mr. Hubbs of Hubbs Manufacturing Co., who is installing a new condenser at the Duquesne Brewing Co., stated that he uses gas welding. He stated that he feels more certain with gas welding of the uniformity of heat on the weld and it has less leaks when completed.

There was a good attendance and the evening was made complete when the Refreshment Committee carried out our usual custom of having an Easter party consisting of dyed eggs, lunch and refreshments.

New Orleans

By Leo Vivien

The program of our April 12 meeting was conducted by Frank Philabert, Sr., owner of the Chemical Solvent Co. of Birmingham, Ala.

Mr. Philabert covered the subject of water treatment, thoroughly explaining methods to be used in the modern treatment of brines, condenser water and in boilers. At the conclusion of the lecture, Mr. Philabert answered numerous questions pertaining to water problems in some of our plants.

On April 26, through the courtesy of Joseph Bailey, manager of the Crescent Ice Company, we met at the Crescent plant. The plant is a large diesel driven ice plant, modern in every respect and an outstanding example of engineering ingenuity. The members enjoyed this visit. The company served refreshments making the evening both an educational and enjoyable one for the members. These two meetings were well attended.

The Chapter has begun to work on the data book advertisers and we look forward to completing this project shortly.

Rio Grande Valley

By Armin Doneis

The speaker of the evening was William Cook of the Westinghouse Electric Co., who was assisted by Mr. Watts of the Corpus Christi office. Mr. Cook's topic was "Electric Motor Maintenance." He dealt with the four chief enemies of good motor operation: dirt, moisture, friction and vibration. He spoke of preventive maintenance versus enforced maintenance and stressed periodic inspection and thorough cleanliness when opening a motor.

With Mr. Watts help the speaker showed two films dealing with motor maintenance and maintenance of electrical controls. In discussing controllers the following ten points were highlighted; T i g h t e n connections; keep it clean; keep it dry; keep contacts free of copper oxide; smooth excessively rough contacts; test for normal clearances and free working of parts; test for firmness of contact pressure; inspect for frayed shunts; inspect thermal relays for ambient temperaure changes in vicinity of enclosure; check operating voltage to avoid sluggish action or hot coils. Many questions were answered by Mr. Cook in a lively discussin that indicated the high degree of interest aroused among the members. Chairman John Muller read the report of the nominating committee giving the proposed slate of candidates for election at the subsequent meeting.

The film at the second meeting was supplied by Johnson and Johnson and was titled: "Help Wanted." It dealt with proper procedure for First Aid in treating the injured before the doctor arrives. It furnished a wealth of important and practical pointers on what to do and what not to do.

The speaker of the evening failed to arrive so the time was profitably spent in a brief question period and in slide rule instruction by John Muller. The procedure in finding the squares and square roots on a slide rule was explained and the method of locating the decimal point was discussed. Don Gentry of Mission was introduced and welcomed as a new member of the chapter.

President Woolrich called for nominations from the floor in addition to those candidates named by the Nominating Committee at the previous meeting. No further nominations were forthcoming so the meeting proceeded to the election of officers:

President, J. L. Haley.
Vice President, G. C. Musch.
Secretary, Armin F. Doneis.
Treasurer, Russell M. Sawyer.
Sergeant-at-Arms, Calvin R. Burg.
Directors, Earle Grass and Ollie Allbright.

The president announced that these officers would be installed at the following meeting, May 8. He requested the secretary-treasurer to have the financial statement and books ready for inspection by the Auditing Committee at the next meeting.

The next meeting enjoyed the showing of three visual education films dealing with aluminum, magnesium and electrons. Their titles were: Curiosity Shop; Magnesium, Treasure from the Sea and Electrons on Parade. After showing of the films the members adjourned to the Weslaco City Park where Instructor John Muller served two kinds of liquid refreshments that were enjoyed by all.

The first order of business was the installation of new officers. President Ray Woolrich made appropriate remarks concerning their qualifications and ability to serve the chapter well for the coming year. The new president, J. L. Haley then accepted the gavel and presided over the meeting. A. M. Casberg praised the work of the retiring officers and expressed sorrow that past President Woolrich was expecting to leave the Valley and would probably be hindered from attending future meetings of our chapter regularly. He also had some complimentary remarks to make about the faithful service of the secretary who was reelected for a second term in spite of his reluctance to carry the responsibility for another year.

The secretary remarked about the number of absentees and expressed the hope that all members would seriously accept their appointment on the Membership Committee to regain old members and also bring in new ones. It was announced that membership dues are now payable and dues-invoices distributed to those present. President Haley expressed the hope that our meeting could start promptly and end promptly as several members had been hindered from participating because the sessions lasted too late into the night.

All of us were sorry to learn of the death of Victor L. Adams in late April. He suffered heart failure quite unexpectedly.

Stockton-Modesto

By R. M. Edger

At our meeting on Tuesday, April 25, W. B. Ludwig, sales engineer for York Corporation gave an illustrated lecture on the York V-W Compressor. This is a very impressive machine with great flexibility because at 25 percent of its capacity the power is reduced to 28 percent. Automatic capacity reduction is built into the machine and it is rather well standardized so that a few parts will take care of any repair needs. The machines have been running at a speed of 1200 rpm. and their total weight is small in comparison to other designs of similar capacity.

In attendance at this meeting were Emerson Brandt, National Secretary, Chicago and Bert McKenna, San Francisco, a national director. In a brief discussion of association matters, Mr. Brandt told about typical educational programs and stressed the value of wide participation in the Question Box as a supplement to a good educational program.

Mr. McKenna gave us a short talk and presented greetings from San Francisco Chapter. Mr. Hedberg was then called on and discussed the value of the NAPRE to him through his many years of membership. He also gave us his thoughts on the future of the V-W type compressors which he said impressed him very much and he expected a bright future for them.

The special speaker at our meeting of May 8 in Modesto was Mr. Mooney of the Plant Asbestos Co., San Francisco, who gave us a talk on his new No. 4000 packing Some plants in this area have already used this packing and report it is economical and good. The application of it appears simple and effective. Two new members were added to the chapter rolls. They are Elbert K. Klein and Richard W. Fisher.

Fresno

By M. Pedersen

The meeting on April 21 was held at "The Hut" in a private room of this local restaurant and was preceded by a dinner in honor of Secretary Emerson Brandt. Following the dinner Mr. Brandt gave a talk on modern and early developments in refrigeration and air conditioning. He traced the development of many of the methods and some of the equipment used in the plants at the present time. At the conclusion of his talk there was a general discussion of operating questions and matters in connection with the chapter. Mr. Brandt described methods used in other chapters to secure members and keep them well interested in the program. We all enjoyed his visit and the discussion very much.

Colton

By H. O. Bonter

At our meeting of April 18 we had the pleasure of a visit from National Secretary Emerson Brandt. He gave the group a very interesting talk about the association, the membership drive and the educational work of the chapter.

Our instructor, H. G. Francis gave one of his very interesting class talks. The members that do not attend the meetings are missing these good lectures on refrigeration subjects. The members voted to give one box of oranges to the pyramid of prizes in the membership contest. At the conclusion of the meeting the usual refreshments were served.

On May 10 the members and friends made a tour of inspection through the Culligan Zeolite Plant at San Bernardino which is the largest zeolite water softening plant in the world. In the process of manufacturing, the liquid after being cooked is loaded on tank trucks where two kinds of liquids are mixed and poured on large cement slabs about 18 feet wide by 800 feet long. There the California sunshine dries and hardens the product and this has proved to be the best and most economical way to process synthetic zeolite.

The group was shown the process of regenerating and cleaning the water softener tanks at the sales office in town. They are brought in, back

washed with water, regenerated with salt brine—then are tested and ready for reinstalling.

The group then proceeded to the Santa Fe Ice Plant lunch room for the meeting and class lecture by H. G. Francis who discussed the characteristics of refrigerants. Refreshments including doughnuts, pie and coffee concluded the meeting.

Los Angeles

By Fred Herr

An engineering review during which four prominent members presented abstracts of outstanding technical articles they had read, featured the educational session of the May 3 meeting of Los Angeles chapter.

The engineering review program was conceived by Regis Gubser, educational committee chairman, on the theory that many significant technical articles escape the attention of the busy refrigeration engineer who hasn't the time to keep up with all such publications each month. A panel of four speakers was appointed, each of whom selected an article he considered worthy for abstracting before the NAPRE. Each speaker was allotted 15 minutes, plus an additional five or ten minutes to answer questions.

Speaker No. 1, Ed L. Nelson of the Union Ice Co., practically stunned the members present with a mathematical discourse of Einstein-like profundity that had fellows like William Lasch and Rudi Kettler and others hand-clapping for more when Ed had finished. His talk summarized a paper on higher mathematics which he had recently read. With blackboard formulae he demonstrated how various mathematical equations can be worked out swiftly and correctly.

Frank Muzzi of Skasol Products Co., followed with a 15 minute description of a totally enclosed air conditioning unit incorporating in one surprisingly compact form condenser, compressor and component units.

Furman T. "Mike" O'Hara of the Lockheed Aircraft Corp. spoke on the evolution of transportation. He described the latest 100 passenger air transports coming off the production line at the Lockheed plant which make the flight from Los Angeles to New York in 10 hours. He revealed that during the war Lockheed produced 2750 B-17's (Flying Fortresses), 3,000 B-34's and 11,000 P-38's.

The final speaker was Alexander Shears, instructor of refrigeration at the Los Angeles Trade Technical School. His talk dealt with a paper on capillary tube data and capillary tube testing.

During the business session, V. A. Stubblefield of the Pacific Fruit Express was crowned by Membership Chairman Ray Burnett as the first ten-timer of the 1950 campaign. A ten-timer, in Burnett parlance, is a man who has brought in ten new members since January 1. Six P.F.E. members signed up by Stubblefield were initiated May 3. He was suitably rewarded by Chairman Burnett, who likewise presented a prize to Donald Byl of the Union Ice Co. for his record of five new members.

At the request of Committee Chairman Ralph Moore, President Dale Rycraft named Ed L. Nelson and Herbert Royden as additional members of a committee previously appointed to confer with the Los Angeles Fire Prevention Bureau on the makeup of a proposed dangerous chemical code.

Emerson Brandt, national secretary, was guest of honor at the last meeting in April. He was introduced by National President Emmett Quinn. Present also from the national officialdom were E. B. Utescher, chairman of the Operating Data Book Committee, and Regis Gubser and Ray Burnett, respectively, members of the national board of directors and national membership committee.

Mr. Brandt complimented Los Angeles Chapter on the vigor of its membership campaigns, the high calibre of its educational programs and the general snap and dispatch with which its meetings are conducted. He also gave a brief review of national association affairs.

The application of Mortimer E. Bell for transfer of his membership from Los Angeles to Seattle, Wash., chapter, was approved. Mr. Bell, a past-president of California Chapter No. 2 and for many years one of its most active members, moved to the Pacific Northwest in 1949 to assume an important engineering post with the Sick Brewery interests.

Mr. Burnett reported that Seattle Chapter had advised it was sending a "mystery package" as its contribution to the Pyramid Club.

Three new members were inducted at this meeting—M. L. Holds, D. G. Addison and Richard W. Park.

The speaker was Inspector Donal G. Wilson of the dangerous chemical detail, Fire Prevention Bureau, city of Los Angeles. He spoke on the effect of the forthcoming dangerous chemical code on refrigeration plants in the Los Angeles area. Inspector Wilson said that the bureau hopes to prepare a code that will be safe, yet equitable to all industries. He suggested that the NAPRE appoint a committee to collaborate with city officials on the refrigeration phases of the proposed code. President Rycraft named as committee members Ralph Moore, William Losch and Frank Elliott. A film, "Your Fire Department" was shown as the concluding feature of the educational program.

Sacramento

By D. W. Barton

Our meeting of April 27 was arranged in accordance with the schedule of Secretary Emerson Brandt. The members gathered at the plant of the Crystal Ice and Cold Storage Co. In a trip through the plant they saw the new addition which was under construction and inspected the equipment and facilities in use.

In the meeting which followed, President Joe Fornera called the assembly to order and introduced Mr. Brandt. He discussed interesting engineering facts developed on his trip and in connection with studies in refrigeration and allied fields. It was pointed out that most of us learn by study combined with practice and the value of discussion and trading of experiences in meetings was stressed. Mr. Brandt showed how the various elements of a good chapter educational program are fitted together and gave examples of how these have worked out to bring excellent results for chapters and the men in them. At the conclusion of his talk he led in the discussion of questions from the members. Refreshments were served and enjoyed by all those present at the meeting.

Yakima

By Elmer Toop

Owners and managers of the plants were invited to attend the meeting of the chapter on May 3, when we were visited by National Secretary Emerson Brandt. An excellent dinner preceded the meeting. Then the guests were introduced and were welcomed by President Luther Stewart.

The association and its educational work in the refrigeration field were the subject of the address by Mr. Brandt. He explained how easy it is to settle into rather routine method of plant construction or operation. Examples were given of forward looking developments made years ago which for want of general attention were allowed to remain for a number of years without really wide use. He emphasized the fact that engineers can carry on a valuable part of the safety and accident prevention program which the industry must accomplish to keep down injury and accident costs. Other phases of the educational program were discussed and the chapter was complimented on the interest its members had shown in recent programs.

St. Louis

By K. M. Holaday

Our annual meeting was held Monday evening, May 15 in the cafeteria of the St. Louis School of Electricity and Refrigeration. The following officers were elected:

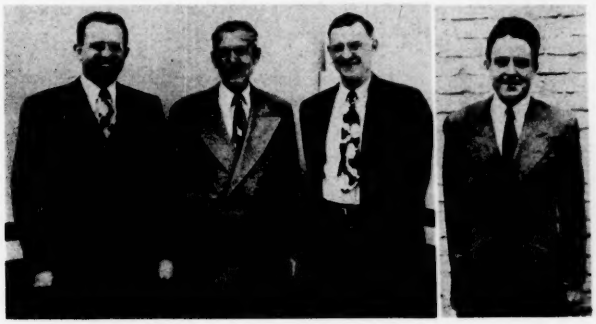
President, L. V. Fleiter
Vice President, E. G. Bishop
Secretary, C. J. Wunderlich
Treasurer, H. B. Suter
Sergeant-at-Arms,
B. C. Stuckenmeyer

Directors: E. V. Evans, E. Kessler and K. M. Holaday.

Instead of a speaker we had a very interesting question box period. Merle Haynes discussed a question on the effect of elevation, distributors and other pressure drop factors on the capacity of evaporators. There were also discussions on water pumping and purging problems. Quite a few attendance prizes were donated by some of the associate members so at least half of the men went home happy. After the meeting we took a look at a small heat pump installation built by the school.

How They Get Members

THE members of Los Angeles Chapter who piled up the most points in the last membership contest were recently interviewed about their methods. They did not hesitate to describe their procedure to sign up large numbers of new members. In fact they denied there was anything really unusual about the plan they followed with such good results.



The Los Angeles leaders in membership building; Donald Byl, George Hill, Clifford Nordholm, Elmer Johnson.

The record built up by Clifford Nordholm, Baker Ice Machine Co. has led the field. He gives credit to the educational program but it is evident that prospects must be told about it as Mr. Nordholm does in these words:

"The N.A.P.R.E is an organization dedicated to furthering the practical engineering knowledge of those interested in refrigeration, cold storage, and air-conditioning. It furnishes a common ground for technical and non-technical men whereby the exchange of experiences and ideas gives a better understanding of what results can be expected from different types of equipment.

Quiz Program Informative

"For instance a 'Quiz' Program in itself is informative and very interesting and can furnish an entire evening of entertainment that will 'stick to your ribs' because all questions and answers are given in a non-technical language that all can understand.

"Either one of the fine text books, plus the magazine 'Ice & Refrigeration' are well worth much more than the cost of the membership.

"The Industry as a whole will benefit greatly if every man in each plant or organization allied with refrigeration will join the N.A.P.R.E. or at least attend several meetings as a guest. Many times one visit convinces and we have a new mmeber.

"The steady increase in attendance during the past two years is evidence of the great interest that has been aroused."—C. C. NORDHOLM.

The formula described by George Hill, California Consumers Corp., one of the top producers gave similar advice:

"You asked for a few explanatory words regarding the success of last year's N.A.P.R.E. Membership Drive. For my part it was not too difficult; upon interviewing a prospective member, I explained basically three things, first: what the association was doing, and some of the important details of the educational and training program, secondly: the value of our text books, 'The Operating Data Book', and the official magazine of the association 'Ice and Refrigeration.' Finally, in order to best benefit from his membership, to attend the semi-monthly meetings regularly and to contact members and friends from other places of business.

"From the results of the drive it is apparent that knowing something about the association, the men considered it carefully and felt, by becoming members, they would learn and benefit from it. We hope that with their help this year, our drive will be even more successful."—GEORGE HILL.

Promotion Pays

Two other leaders in the campaign which brought in more than 100 members last year are Donald Byl, Union Ice Co. and Elmer Johnson, California Consumers Corp. They stressed the value of personal contact and promotion. Engineers, they said, must be told about the chapter program and what it means to the members. No matter how good the program is it cannot do very much for people who don't know about it. When they told prospects about what membership offered they joined.

This year there is even more to spur membership workers on. Highly desirable prizes are piled up in the pyramid ready for the top men. The trophies for the chapters in the two groups are really attractive and worth while. Make it a habit to talk to one prospect each day and you will cash in.

Refrigeration Encyclopedia Issues Second Volume

THE second volume of The Refrigeration Encyclopedia (l'encyclopedie du froid) has been published by J. B. Baillers, Paris, under the direction of Professor Maurice Piettre of the International Institute of Refrigeration. The complete encyclopedia will include eight other books.

This new volume "Preservation in Cold Storage of Foods of Animal Origin," brings to date and summarizes information on the various preservation techniques including application of low temperatures to the preservation of perishable foods. Particular attention is directed to the wide knowledge obtained from abroad since 1938, particularly in the United States. It is pointed out that France is particularly weak in the production of cold storage products. As a means of improving this situation it is suggested that abattoirs, most of which are in a lamentable state, be remodeled and improved with installation of a cold room for meats and small rooms for taking local foodstuffs brought in by small producers. Such a project, it is indicated, would be profitable and also would serve as good publicity for refrigeration in country districts.

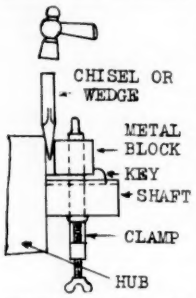
Local Meat Packers Offered Federal Inspection Service

MEAT packers selling their products in local areas without crossing state lines were offered a full Federal meat inspection and certification service for the first time when the U. S. Department of Agriculture drew up regulations for the program June 2, 1950. The regulations will be issued under the Farm Products Inspection Act and administered by the Department's Bureau of Animal Industry, Meat Inspection Service. The new program is being created in answer to requests from local communities asking similar protection from the Federal Government.

ENGINE ROOM POINTERS –

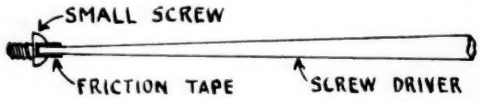
How to Pull a Tight Key

HERE is a simple trick that the writer has found useful for pulling tight keys. The drawing makes the operation practically self-evident. The metal block is shown thicker than necessary in order to illustrate the method more clearly. In fact it is better to use a thinner block than shown in order to lessen the overturning movement. Of course the exact arrangement as sketched need not always be strictly followed, there being a hundred and one variations of problems and as many solutions all of which may be based on the same principles as illustrated here. The main idea is to use a metal block, the width of which is sufficient to leave a gap into which a chisel is driven for loosening the key. Sometimes a metal wedge such as used for splitting logs comes in handy for this same purpose, as the reader can readily visualize without the necessity of any further explanation.—S. F. W.



How to Insert One of Those Troublesome Small Screws

HERE is a valuable kink that was shown to me the other day by one of the ablest mechanics I have ever known. He gave me permission to tell about it and to draw this sketch. I thought I knew most of the kinks regarding inserting small screws that are ordinarily handled with difficulty, but this was a "new one" to me and I consider it the best of all because it requires no equipment aside from a little friction tape.



It is exceedingly simple. Place a bit of friction tape around the tip of the screw driver, as indicated in the sketch, so that there will be a snug fit—sufficiently tight to hold the screw on the end of the screw driver. Then go ahead and insert the screw. That's all there is to it. Try it and you, too, will use this method.—F. W. S.

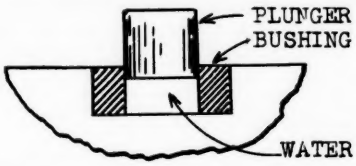
To Make a "Scraping Mitt" Out of Ordinary Screen Wire

IF you have some old scraps of window screen lying around you can utilize them at various times for scraping soot, scale, rust, dirt, and the like from surfaces on which such matter has attached itself.

Every reader is doubtless familiar with steel wool and its use for scraping and cleaning. The old window screening can be made to serve the same purpose. One way, if the sheets of screen are large enough, is to make a "mitt" into which your hand is thrust, and you can then "go after" the adhering matter with telling effect. You may not like to get your hand dirty, but you can do a better job in that way because you can "feel" the surface with your fingers through the wire screen and even through a cotton glove that can be worn inside the wire "mitt," if desired. For places that cannot be reached by hand, tack a wad of crumpled-up window screen on the end of a stick and use that as a scraper.

How to Remove a Tight Bushing From a Blind Hole

WHENEVER you are confronted with the problem of removing a bushing from a blind hole, as often happens, here is an excellent kink, illustrated in the accompanying sketch. Make a close-fitting plunger out of any suitable material that may be available, put some water, oil, or other liquid or fluid in the opening as shown, and then with the plunger in place as indicated in the sketch drive it into the opening with a hammer. The



liquid will force the bushing out of the hole in strict accordance with the principles of hydraulics. In a way it seems a bit paradoxical that the bushing will move in a direction opposite to the direction of the hammer blow, but that is what it does. An important advantage possessed by this method is that it removes bushings without scratching the bushing or harming it in any way, and without harming the castings or forging in which the bushing is held.—F. S. W.

Should We Allow Our Oil Drips To Go to Waste?

THE answer to the above question is: Maybe, and maybe not. It is feasible to save and re-use oil drips, but it doesn't always pay. It depends mostly on the quantity of oil now going to waste and its value per gallon.

One operator, for example, saves all oil drips in his plant by allowing them to be absorbed in old felt pads and blankets. He then saves these blankets and pads. He also saves all oily waste, etc. Then, every once in a while he runs the blankets through an ordinary wringer. The oil is thus squeezed out and afterwards reclaimed by passing it through a filter.

Good oil, particularly if there is enough of it, is worth reclaiming and re-using repeatedly. The claim is made by some so-called "experts" that oil wears out in time, but other "experts" claim that oil does not wear out—that their opponents have never proved their point. This writer believes that oil does **not** wear out, but, be that as it may, it is obvious that most oil drips are composed of "good oil" which unquestionably is not worn out, and it should be saved if economically possible.—S. F. W.

Refrigerated Warehousing Industry

NATIONAL ASSOCIATION of REFRIGERATED WAREHOUSES

Division of American Warehousemen's Association

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Executive Vice-president
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THIS MONTH

Cold Storage holdings for May 1 show cooler occupancy about the same and freezer occupancy down slightly from last month.

Total cold storage holdings of frozen fruits and vegetables in packages of one pound or less for April 1, 1950 remain about the same as previous month.

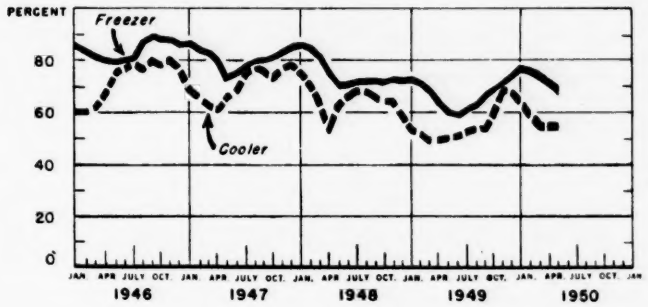
The Institute of American Poultry Industries announce new field service program.

A group insurance plan adopted recently by the National Association of Refrigerated Warehouses is now in effect. Under the plan life insurance protection is made available to employees of refrigerated warehouses participating in the plan.

Working committees of the Institute of American Poultry Industries are being reorganized for more effective developments of the work of the Institute.

Cold Storage Holdings

Monthly report for May 1 shows cooler occupancy same as last month. Freezer occupancy follows seasonal pattern with slight decrease.



Occupancy in refrigerated warehouses, 1946-1950

FOR the second time on record cooler occupancy in public cold storages did not increase during April. On May 1 public cold storage warehousemen reported cooler occupancy to be 54 percent, the same as last month. The normal increase is 3 points from April to May. In four regions, however, cooler occupancy did increase. They are as follows: East North Central, West North Central, West South Central, and Mountain. In all other regions cooler occupancy decreased from 1 to 4 points.

Freezer occupancy followed the seasonal pattern and decreased 2 points from the occupancy level of last month. With a 67 percent occupancy on May 1, public freezer space utilization was only 2 points below average, but 7 points above the level of a year ago. Moderate decreases in freezer occupancy were reported in all but the West North Central and West South Central regions. There freezer occupancy was up 2 and 1 points, respectively.

Public general warehouses in New York City and Buffalo reported an increase in cooler occupancy over last month, even though the average occupancy for all warehouses in the Middle Atlantic region was down 2 points from a month earlier. Other cities reporting increased cooler occupancy in contrast to the national pattern are as follows: Boston, Cincinnati, Chicago, Milwaukee, Nashville, Dallas-Ft. Worth, San Antonio, Portland, and Los Angeles.

During April, foodstuffs held in cooler storage were reduced by 9 percent and freezer-held commodities by 4 percent. This compares with a reduction of 10 and 6 percent in cooler and freezer weights a year ago. The total weight of all commodities held under refrigeration — 2.8 billion pounds—on the first of the month was 158 million pounds greater than average May 1 storage holdings. Cooler-stored products amounted to 1.3 billion pounds and freezer products 1.5 billion pounds. Except for stocks of nuts, nutmeats, cheese, shell eggs, sausage room products, lard and rendered pork fat which increased during the month, stocks of all of the cooler items were reduced during April. The net reduction amounted to 133 million pounds. Net withdrawals in freezer commodities totaled 59 million pounds during April as frozen fruits, vegetables, poultry, and meat items moved from store. Moving into storage during April were stocks of

Refrigerated Warehousing Industry

TABLE I—COLD STORAGE HOLDINGS IN PUBLIC, PRIVATE AND SEMI-PRIVATE WAREHOUSES, APPLE HOUSES AND MEAT PACKING PLANTS (000 LBS.)

	May 1, 1950	April 1, 1950	May 1, 1949	Five-year Average
Meat and meat products, lbs.	748,065	778,415	791,409	708,984
Lard and rendered pork fat, lbs.	105,552	87,306	138,216	105,948
Frozen poultry, lbs.	166,628	212,058	89,205	165,093
Creamery butter, lbs.	108,610	93,489	15,338	17,634
American cheese, lbs.	153,737	141,946	109,920	94,459
Other cheese, lbs.	171,692	158,134	125,903	.....
Shell eggs, cases	2,128	1,296	954	3,207
Frozen eggs, lbs.	155,358	116,546	107,058	165,319
Apples, bu.	3,667	7,074	3,318	3,838
Frozen fruits, lbs.	243,743	251,119	237,419	253,011
Frozen vegetables, lbs.	167,995	191,666	269,980	241,016
Frozen fish, lbs.	97,895	103,835	88,615	82,230

cream, butter, and frozen eggs. These increases, however, were not sufficient to counter the net withdrawals of the majority of the freezer items.

Frozen fruit stocks amounted to 244 million pounds on May 1, which were 7 million pounds less than a month ago and 9 million pounds less than average. The in-movement of 17 million pounds of orange juice and 3 million pounds of other fruit juices and purees could not counter the seasonal reduction in stocks of the other frozen fruit items.

Spinach was the only frozen vegetable that showed an increase over last month's holdings with 27 million pounds reported in storage May 1 as compared with 21 million pounds on April 1. Withdrawals of lima beans, snap beans, sweet corn, and green peas amounted to 29 million pounds, which was the net total for all frozen vegetables withdrawn. Total holdings of frozen vegetables amounted to 241 million pounds, which compares with 270 million pounds last month and the May 1 five-year average stocks of 168 million pounds.

First-of-the-month's stocks of frozen fishery products were about a fourth greater than average. The 81 million pounds in storage compares with 75 million pounds on hand May 1, 1949. During April, less than average amounts moved from storage —6 million pounds vs. 8 million pounds.

Storage stocks of creamery butter increased 16 percent during April to total 109 million pounds on May 1. This compares with 15 million pounds in store a year ago. Stocks stored in Illinois warehouses amounted to 35 million pounds or almost a third of the national total. More than half of the butter in the West North Central region was stored in Minnesota where 23 million pounds were on hand May 1.

A net increase of 12 million pounds of American Cheddar cheese since last month brought May 1 holdings to 154 million pounds. Of this amount 91 million pounds were held in the East North Central region. Wisconsin storages reported 73 million pounds followed by Illinois with 14 million pounds.

Shell eggs in storage at 2 million cases represented an increase of 800 thousand cases during April; this compares with an average April to May increase of 2 million cases. The national total for eggs in storage was about two-thirds the average May 1 storage stocks, but was twice the amount in store a year ago.

Frozen eggs in the East and West North Central regions (93 million pounds) accounted for three-fifths of the storage stocks which totaled 155 million pounds on May 1. Warehouses in Missouri and Illinois each held 24 million pounds of frozen eggs to lead all other States in the storage of this commodity.

Frozen poultry was withdrawn in greater than average amounts during April, leaving some 167 million pounds in storage. May 1 stocks were about average, however, for this time of year, but were almost 90 percent

TABLE II—PERCENTAGE OF SPACE OCCUPIED BY PUBLIC COLD STORAGE WAREHOUSES (APPLE HOUSES EXCLUDED)

	Net Piling Space (000 cu. ft.)		May 1, 1950 (%)		April 1, 1950 (%)		May 1, 1949 (%)		5-Year Average (%)	
	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer
New England	2,948	6,930	40	67	43	68	42	58	61	59
Middle Atlantic	41,035	32,058	42	60	44	65	40	51	59	70
East North Central	29,633	28,517	63	71	61	71	52	62	65	70
West North Central	9,885	14,971	80	84	77	82	53	69	69	72
South Atlantic	8,580	5,620	55	71	56	72	53	77	69	79
East South Central	4,409	3,856	66	80	70	81	68	81	78	73
West South Central	6,840	6,504	59	60	58	59	73	59	74	73
Mountain	1,689	1,937	80	72	74	72	71	63	79	78
Pacific	15,368	20,293	44	59	46	64	46	53	56	61
United States	120,387	120,686	54	67	54	69	49	60	63	69

TABLE III—PERCENTAGE OF SPACE OCCUPIED BY PRIVATE AND SEMI-PRIVATE REFRIGERATED WAREHOUSES AND MEAT PACKING PLANTS (APPLE HOUSES EXCLUDED)

	Private and Semi-Private Warehouses						Meat Packing Establishments					
	Net Piling Space (000 Cu. Ft.)		Space Occupied—Per Cent May 1, 1950		April 1, 1950		Net Piling Space (000 Cu. Ft.)		Space Occupied May 1, 1950		April 1, 1950	
	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer	Cooler	Freezer
New England	85	113	39	62	31	71	.....	.....	.....	.....	.....	.....
Middle Atlantic	1,129	1,114	40	73	42	74	1,674	278	87	82	83	81
East North Central	2,808	1,546	59	37	67	41	4,611	1,504	88	84	90	61
West North Central	674	1,988	100	79	99	83	10,418	5,070	93	90	89	86
South Atlantic	474	1,342	16	50	.....	27	1,415	243	84	97	85	98
East South Central	.....	.....	.....	.....	.....	.....	403	100	85	94	92	92
West South Central	202	31	42	17	42	16	2,525	500	100	100	98	97
Mountain	119	43	89	70	76	90	608	383	91	99	91	99
Pacific	3,530	3,311	24	46	53	25	2,835	639	94	89	92	97
United States	9,021	9,488	44	55	58	49	24,489	8,717	92	90	90	84

greater than the holdings a year ago. Frozen poultry in the East North Central States totaled about 40 million pounds with 31 million pounds being stored in Illinois; Middle Atlantic storages held 36 million pounds while the Pacific Coast reported 33 million pounds in storage on May 1.

Frozen beef in storage on May 1 totaled 79 million pounds—the smallest amount in storage for this time of year since 1941. Frozen pork storage stocks in the West North Central region amounted to 131 million pounds, followed by 104 million pounds in storages in the East North Central area. These two regions accounted for three-fourths of the national total holdings of 316 million pounds in storage. Dry salt pork—46 million pounds—and all other pork—178 million pounds—brought pork stocks, all classes, to 539 million pounds on May 1. This compares with 549 million pounds of pork in storage a year ago and average May 1 stocks of 444 million pounds. Lard and rendered pork fat stocks increased 20 percent since April 1. Stocks on hand the first of this month amounted to 106 million pounds which was about average for this time of year.

Storage Outlook

The expected increase in the national average for public cooler occupancy did not materialize during April. In selected areas, however, particularly those where shell eggs and cheese stocks were stored in sizeable amounts, public cooler occupancy rose in accordance with the seasonal pattern. Since these coolers items should continue to move in store in the coming months, it is likely that the 54 percent occupancy reported on May 1 marks the end of the downward cycle for the year. On the other hand, public freezers may yet continue to decline for another month or at least be unchanged on June 1 from the present level.

Normally, freezers are at their annual low on May 1, but the past two years public freezer occupancy started its upward swing during June; one month later than normally expected. Then, too, since 1940, the decline or difference between the January 1 occupancy level and the annual low (May) averages 10 to 13 points; only a 9-point reduction since January 1 has been recorded this year. A decrease in freezer occupancy during May would be in accordance with previous performance, but would also indicate that the historical relationship between the seasonal low and high in freezer occupancy is being altered by the one-month lag on the upward cycle as evidenced since 1948.

Cold Storage Stocks Frozen Fruits and Vegetables

THE ratio of retail to institutional-sized containers for frozen strawberries showed the greatest change from last month for the frozen fruits surveyed as to package size. Stocks reported in retail packages for frozen peaches and raspberries remained relatively unchanged and comprised 44 and 18 percent respectively of the total reported on April 1; however, last year this date, the percentages were 31 and 11 percent, respectively. On March 1, 40 percent of the classified strawberry stocks were reported in one-pound containers as compared with 34 percent this month and 26 percent reported a year ago. Stocks of frozen fruits classified as to package size for this month's survey accounted for 69 percent of the total stocks on hand. This compares with the coverage of 71 percent reported last month. Although package size information for frozen peaches and raspberries in storage was comparatively the same as a month ago, container size data for frozen strawberries dropped from 67 to 62 percent of the total. This may account for the sharp drop in the ratio of retail to larger sized containers for frozen strawberries reported this month.

COLD STORAGE STOCKS OF FROZEN FRUITS AND VEGETABLES IN PACKAGES OF ONE POUND OR LESS IN STORAGE APR. 1, AND MAR. 1, 1950 (000 LBS.)

	Apr. 1, 1950		Mar. 1, 1950	
	Lbs.	Pct.	Lbs.	Pct.
Peaches	4,114	44	4,992	46
Raspberries	2,836	18	3,460	19
Strawberries	3,962	34	7,705	40
Asparagus	1,061	63	1,623	67
Beans, lima	13,838	55	15,844	58
Beans, snap	10,130	65	12,875	68
Corn, sweet	6,925	46	8,740	46
Peas, green	17,914	59	22,347	54
Spinach	9,702	79	10,196	78

National coverage for the six selected frozen vegetables surveyed as to package size was 59 percent on April 1, or about the same as last month; last year, however, 55 percent of the frozen vegetables were classified as to package size. About three-fifths of the frozen vegetables, on the average, were in packages of one-pound or less. This average has prevailed since August of last year with but one exception—on October 1, 1949, when only 55 percent of the six selected frozen vegetables were in packages of one-pound or less. Of the total frozen asparagus, lima and snap beans on hand April 1, the portion reported in retail units was less, percentage-wise, than last month. On the other hand, the distribution by package size for frozen corn was unchanged from last month, but relatively more of the frozen peas and spinach in storage on April 1 were in retail packages than were reported last month.

Group Insurance Available

THE group insurance plan announced recently by the National Association of Refrigerated Warehouses went into effect May 15, according to an announcement in a recent Association bulletin. At that time the minimum number of enrollments had been received which the trustees and the insurance company thought was necessary to give sufficient risk spread for a sound insurance plan. Under this plan all employees or selected employees of a member of the association may be insured.

Climaxing a study begun over a year ago at the instigation of the NARW Executive Committee, the plan constitutes one of the earliest instances of trade association sponsorship of a group insurance plan. Under agreement with the State Mutual Life Assurance Company of Worcester, Massachusetts, life insurance protection up to $5,000 is made available to employes of companies participating in the NARW plan. A double indemnity provision and accident benefit features are included.

The plan is supervised by an Insurance Trust, appointed from the membership of the Association. Details of administration are handled at NARW headquarters in Washington. Business interest in group insurance has grown rapidly in the past decade. A substantial number of such plans are now in effect throughout the country.

New Warehouse Directory

A NEW edition of the Directory of Public Refrigerated Warehouses will go to press six months ahead of schedule to meet an unprecedented demand for the publication, it has been announced by the National Association of Refrigerated Warehouses.

Containing a nationwide list of cold storage companies and their facilities, the directory enters its fourteenth year of publication with the 1951-52 edition, due for release next September. According to William Dalton, NARW executive vice president, the latest issue of the book will be the biggest yet. He states that allied industry demands for it have been a principal factor in the growth of the publication.

Refrigerated Warehousing Industry

Shifting in Transit Causes Damage to Grapes

WHAT goes on inside closed refrigerator cars is no longer so dark a secret as it once was, thanks to studies by U. S. Department of Agriculture fruit and vegetable specialists and engineers. One of the latest results of this research shows that in the case of grapes in the so-called "lug," (a flattish box), it is not so much the up-and-down jouncing that shatters off berries and makes the bunches wet as it is the back-and-forth shifting that comes from loose loading.

In one car of Thompson Seedless grapes shipped from California to New York the test lugs averaged 700 shattered berries to the lug and about 30 percent of the grapes in them were wet. As shown by the bump recorder in the car during the trip to market, there were 14 "impacts of some consequence." But another car of the same kind of grapes shipped the same day received 20 horizontal jolts of the same degree but had averaged only 100 loose grapes to the lug and only a trace of wetness.

Sizing up the evidence, the research men decided it was a mere two inches to end-to-end play in the first car that shook off the 700 berries The second car, with only one-seventh as much shattering, was braced tight in the middle. The total length of the boxes and braces was the same as the inside length of the car.

Before these experiments, grape shippers, and maybe the haulers, too, had thought up-and-down jolts responsible for this sort of fruit transportation trouble. The experimenters checked on this by cushioning some parts of loads with strips of sponge rubber under lugs. They found those that rode on mattresses suffered as much damage as those riding unpadded. So the experimenters conclude the shipper doesn't need a soft bed for the boxes but tight, well braced loads. It would also help if the railroads handled cars more carefully, they said.

Poultry Industries Institute Streamlines Committees

THE Working Committees, an important part of its operations, are being streamlined by the Institute of American Poultry Industries, Cliff D. Carpenter, Institute President reports. Three new committees, Production and Procurement, Processing, and Merchandising—replace the previous Shell Egg, Egg Products, Dressed Poultry and Eviscerated Poultry Committees. In addition, Institute directors have named a committee to help plan and build the 1951 Fact Finding Conference. Two previous committees—Research and Legal—will be continued.

The following chairmen, appointed at the Institute's Board meeting in May, will head up the Institute's committee work in 1950:

Production and Procurement: Otto Wright, Davis-Cleaver Produce Co., Quincy, Ill.

Processing: John F. Peterson, Peterson-Biddick Co., Wadena, Minn.

Merchandising: H. C. Sheridan, Omaha Cold Storage Co., Omaha, Nebr.

Research: John Kurtz, Sherman White & Co., Fort Wayne, Ind.

Legal: Thomas W. Heitz, Rockingham Poultry Marketing Coop., Inc., Broadway, Va.

Fact Finding Conference: Paul G. Gray, Jr., P. G. Gray, Estherville, Iowa.

At the same meeting, John Palmer of Sherman White & Co., Fort Wayne, Ind., and E. W. Priebe, Jr., Priebe & Sons, Inc., Chicago, were elected Institute directors to fill the unexpired terms of H. W. Davidson and Frank A. Priebe.

Fact Finding Conference

THE Institute of American Poultry Industries will hold its 22nd annual Fact Finding Conference in Kansas City, Mo., February 11-13, 1951, according to an announcement by Cliff D. Carpenter, Institute president. "Merchandising will be the main theme for the 1951 conference," Mr. Carpenter reported, "and since exhibits of packaged poultry and egg products tie in so closely, we're planning to continue this new feature, included in the conference last February for the first time. A recent membership survey has already brought in a lot of good ideas for next year and we'll start building the 1951 program earlier than usual."

Floor plans and layout for the main exhibit of equipment, supplies and services, are being enlarged to take care of additional space required by previous exhibitors plus firms on the waiting list. Applications for booth space will open early in June.

Montreal Refrigerating And Storage Report

FOR the year ended December 31, 1949, Montreal (Canada) Refrigerating & Storage, Ltd., reports consolidated net profit of $113,850, compared with 146,250 in the preceding year. W. G. Lasher, president, states that a portion of the difference in net earnings represents increased allowance for depreciation under the new income tax regulations. Depreciation in 1949 was $42,890 against $28,130 in 1948 and income tax provision was $73,860 against $86,170.

Net profit was equal to $2.81 a share on 37,000 common shares outstanding, after allowing for accrued dividends on 6,491 shares of preferred stock redeemed on November 15, 1949, compared with $3.57 a share in the preceding year. Balance sheet shows current assets of $118,110 and current liabilities of $68,460 indicating net working capital of $49,650 against $34,140.

Canadian Holdings

THE Dominion Bureau of Statistics of Canada, Agricultural Branch, reports the following commodities held in cold storage on May 1, 1950.

Apples in cold storage on May 1, 1950 amounted to 447,557 bushels as compared with 362,648 bushels May 1, 1949 and 359,395 bushels April 1, 1950.

Frozen fruit holdings in storages and factories May 1, 1950 amounted to 8,903,000 pounds as compared with 12,874,000 pounds May 1, 1949 and 10,293,000 pounds April 1, 1950.

Stocks of frozen vegetables in storages and factories on May 1, 1950 amounted to 4,459,000 pounds as compared with 3,763,000 pounds May 1, 1949 and 5,174,000 pounds April 1, 1950.

Ralph Stokell Retires

A TESTIMONIAL dinner given in honor of Ralph C. Stokell who is retiring from the refrigerated warehousing industry as of June 30, will be held at the Belmont Plaza Hotel, New York City, Thursday evening, June 15. Mr. Stokell has been an active figure in the refrigerated warehousing industry for several years, serving for some time some years ago as secretary of the National Association of Refrigerated Warehouses. For the last several years he has been general manager of the National Cold Storage Co. Inc., New York City.

THE ICE INDUSTRY

NATIONAL ASSOCIATION OF ICE INDUSTRIES

Executive Offices
1706 L St. N. W., Washington, D.C.
Executive Secretary
Mount Taylor, Washington, D.C.
President
H. O. McLain, Chicago, Ill.
First Vice-president
E. F. Condon, Los Angeles, Calif.
Second Vice-president
Wm. J. Ayers, Memphis, Tenn.
Treasurer
Geo. Steers, Jr., Kalamazoo, Mich.

READY-MADE MARKETS FOR ICE

What does it cost to process ice?—Survey by Eastern States Ice Association gives some facts on this important question.

Grocers publish testimonials showing value of ice for displays of fresh produce.

Learning to sell through playing a role—demonstrations of refrigerator selling, not planned nor rehearsed.

Maine fishermen provide market for ice produced by new plant.

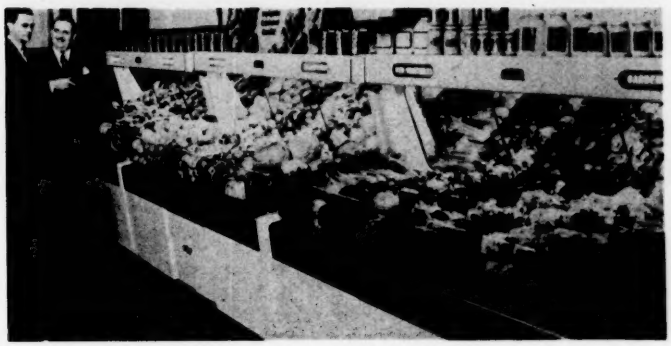
Ice refrigerator is no longer a drip, says illustrated feature article in Washington newspaper.

Public Relations Department of National Ice Association in cooperation with Tea Bureau offers posters advertising iced tea.

Annual convention of Eastern States Ice Association, Mountain States Association of Ice Industries and Northwest Association of Ice Industries.—Unit ice association secretaries hold annual conference in Washington.

Grocers Approve of Iced Produce

Testimonials favoring use of ice for produce displays published in grocery trade publications. Competition with chain stores force better merchandising.



Vegetable display in Farrier's Market, Miami, Okla. finest in the city.

THREE testimonials for the iced produce display method of retailing appear in magazine articles in February, one in the "Voluntary and Cooperative Groups magazine" and the other two in the "Self-Service Grocer."

The proprietor of the B-Square Market, according to the Self-Service Grocer bulletin, accepted competition as a challenge rather than a menace. The Saloma brothers, owners of the independent grocery market, had to compete with a new chain store which opened right next door. Instead of retrenching, they installed a 60 ft. vegetable display case which produces 25 percent of all the store's volume. As soon as this market started using crushed ice displays, produce sales increased 100 per cent.

This store features only top quality vegetables and even competitors agree that it is the best produce department in the city. Some customers travel clear across town because of the produce quality reputation. Half of the produce section contains green vegetables displayed in clean, sparkling ice—the other half is used for dry produce. A mass display effect is maintained at all times.

When the market was remodeled a volume analysis showed that the produce sales increased 100 percent as compared with a sales increase of only 33 percent in the rest of the store. This market uses about 250 lbs of ice on an average day.

Fowler's Food Store in Chapel Hill, N. C., attributes its ability to meet competition from two nearby chain stores to a smart credit and delivery service and also a 50 ft. iced vegetable display case which is supplemented with an additional 40 ft. of island displays, all iced. The story of this market also appears in the February issue of Self-Service Grocer.

The story of Farrier's I.G.A. Market, Miami, Okla., is told in an article in the Voluntary and Cooperative Groups Magazine. In this article Mr. Farrier says he is proud of his

new modern iced vegetable display. It is the only one in town with a complete assortment of garden fresh vegetables displayed on a bed of sparkling ice.

In three years, the article goes on to say, Mr. Farrier built his monthly business from $5,000 to $30,000. He reports as the outstanding reason for his success the installation of three new iced vegetable display cases. This display immediately became the center of attraction. Newspaper advertisements and window posters which featured garden-fresh iced vegetables increased produce volume from almost 15 percent to an average of almost 42 percent in a ten-month period.

Iced Display Boosts Profits

The "New England Grocery and Market Magazine," in the April issue publishes an article by John G. Pool, Jr., of the advertising and publicity staff of the National Association of Ice Industries, "How the Iced Vegetable Display Boosts Profits." This article tells how profits are increased by better sales appeal, lower weight loss through shrinkage, full retention of vitamin and flavor content, and saving of employees' time.

Ice Refrigeration Acceptable In Government Housing

THE minimum physical standards for low-rent housing under the Housing Act of 1949 have been revised to permit installation of ice refrigerators under conditions outlined in a circular to PHA field officers. These conditions are that housing be constructed in localities where (1) ice delivery service is adequate and regular (2) the use of ice is general and customary, and (3) its use for domestic refrigeration is justified by the Utility Analysis and shown to be the most economical form of refrigeration.

The original standards contained a mandatory requirement that mechanical refrigeration be installed in each dwelling unit. The National Association of Ice Industries in cooperation with the National Association of Ice Refrigerator Manufacturers protested this discriminatory provision and after many weeks the standards were revised, as stated above.

Over a six-year period 810,000 low-rent housing units will be constructed under the Housing Act. As of March 31, 1950, 287,579 dwelling units had been reserved for 489 localities by 414 local housing authorities in 38 states.

Field Training School Graduates Another Class

CERTIFICATES of graduation were awarded April 8 at Little Rock, Ark., to 25 executives of ice companies in Arkansas, Missouri and Tennessee. They were members of the fifth class in the Personnel Training and Marketing Field School of the National Association of Ice Industries. The Marion Hotel was utilized both for a classroom and the graduation dinner.

Members of the fifth NAII Field School class gather in the Marion Hotel, Little Rock, for their graduation dinner. Standing at rear, left to right are Thomas W. Douglas, Superintendent of the National Ice Marketing Institute, and class officers Meador, O'Kelley, Marks and Collier.

The class, which named itself "The Old Masters," represented a total of 327 years of experience in the ice industry. The following officers were elected: D. F. O'Kelley, Delta Ice Co., Forrest City, Ark., president; Laurence Meador, Community Ice & Produce Co., Morrilton, Ark., vice president; Thomas S. Marks, Standard Ice Co., Memphis, Tenn., secretary; and George P. Collier, Standard Ice Co., Hot Springs, Ark., treasurer.

As in previous classes, visiting lecturers from the local area were heard, in addition to daily conference instruction. Lecturers were: Robert N. Milling, Secretary of the Delta States Ice Association, who spoke on "Techniques and Merchandising of Vegetable Icing;" Leon Reid, Vocational Coordinator for North Little Rock Schools, "Principles and Practices of Selling;" William Massie, Rehabilitation Counselor for Little Rock, "Effective Speaking;" James Jones, Assistant Director of Vocational Education for Little Rock Schools, "Job Demonstrations and Principles of Individual Training;" Kenneth G. Lewis, instructor in trade and industrial education, Arkansas State Department of Education, "Conference Leading;" J. C. Ruppert, State Supervisor of Trade and Industrial Education, Arkansas State Department of Education, "Human Relations;" and Alex S. Hill, Jr., General Manager, Arkansas Ice and Storage Company, North Little Rock, "The New Point-of-Sale Advertising Materials." The class was visited by William J. Ayers, Standard Ice Co., Memphis; Roy R. Morley, Delta Ice Co., West Memphis, and Clift J. Bulloch, Home Ice Co., Little Rock. Alex Hill, who is a member of the NAII Personnel Training and Marketing Committee, presented the graduation certificates.

Besides the four officers, the class included the following: Jeff Davis Roberts and R. H. McKay, Little Rock; and W. J. Burrow, Stuttgart—all of the Standard Ice Company; D. O. Blizzard, Little Rock; William Stephenson, Hope; Roy Duke, Arkadelphia; and L. E. Eubanks, Malvern—all of the Southern Ice Company, Inc.; Earnest L. Bunch, Earle; Martin C. Holder, Benton; William D. Badgett, Jr., McGehee; David D. Keeney, Lepanto; and Garland B. Shull, Wilson—all of the Delta Ice Company; J. C. Davis, Camden, and C. K. Whitlock, Fordyce, both of Crystal Ice Company, Inc.; R. E. Jacques, Luxora, and Frank Jennings, Steele, Missouri, both of Arkansas Ice and Storage Company, Inc.; Dewey Morrison and Louis Newson, Pine Bluff; L. C. Burton, Warren Cotton Oil & Manufacturing Company, Warren; and W. H. Groom, Community Ice and Produce Company, Hope.

Southern United Ice Co.

THE Southern United Ice Company for 1949 reports net profit of $325,725 equal to 89 cents a share, compared with $415,385 or $1.13 in 1948.

The Ice Industry

Learning to Sell Through Role-Playing

Demonstrating how a sale was made—or not made—followed by discussion, analysis and comparison shows reasons for successful selling.

SETH A. FESSENDEN
Associate Professor and Coordinator of Research—University of Denver (Colo.)

HERE is a practical experience story of a successful plan for selling refrigerators used in a course in salesmanship. It teaches how to sell by having salesmen re-enact an actual selling situation. The demonstrations are down to earth; not planned and not rehearsed; making the students develop their own spontaneous selling devices as required.

SEVERAL years ago while serving as sales manager for the El Paso Ice and Refrigerator Company, I made use of a training method which was of great value. We needed to sell refrigerators; how best was it to be done? The route men, the boys on the trucks were the logical salesmen. But some of them sold nothing; others were doing a pretty good job. To spread the know-how around, we had the sellers demonstrate what they did. Some carried over and some of their methods were lost in the process.

The approach was good, but we did it without knowledge of what we were doing. Recently I taught a class in salesmanship to a group of specialty men—some with vacuum cleaners, some with table pads, some with sewing machines. To each the art of selling was his bread and butter. It was not as with the ice men, something in addition to the job; it was their living. The same basic technique in training was used that I had in El Paso, but this time was used with understanding.

Learning to Sell Through Demonstration Process

The purpose of this article is to discuss the principles of learning to sell through the demonstration process. We learn very little by watching; we learn more by doing; we learn still more by watching, doing and receiving criticism; but when these are combined with discussion, analysis, and comparison, we learn best. Let us take the tangible problem of selling ice refrigerators as the basis of our illustrations.

Our goal, then, is not to sell, but to sell refrigerators. Bill has been pretty successful. So have Joe, Jim, and Ed. Nick tries but without success; Jack says the people on his route won't buy anything.

Putting the Process To Work

Our meeting opens. After some general discussion, after seeing on the chart where the men stand, we ask, "Bill, did you ever try to sell a refrigerator and fail?" If he's as honest as we hope he is he'll confess that he has. Then we say, "Joe, you've got a pretty good record, how would you like to have a shot at Bill's prospect?" If we're on fairly good terms with the men, Joe will be willing.

Then we say to Bill, "Will you show us how your prospect acted when you mentioned a new refrigerator? Don't tell us; show us. Joe's going to be you in this instance and you be the customer. Let's see, where does the cabinet sit? What time of day? What was she doing when you entered? Which direction do you approach from for service? O.K. Joe, come on in and open up."

The reason for beginning with Bill instead of Nick or Jack is that Bill has been successful and it will not hurt his pride to demonstrate a case in which he failed. To begin with Nick would be putting him on the spot, asking him to demonstrate himself in an unfavorable light. A group leader using the role-playing approach must take great care to recognize the men as persons.

After Joe has had a try at selling this particular prospect, ask Jim to try, then maybe Ed, and then anyone who will volunteer. Two or three approaches will open up avenues of thought that one, especially a planned demonstration, will not.

Results are Discussed

As soon as these trys have been made, open the scene for discussion. Ask, "What was the best sales point that Joe made?" "Where did it seem that he was the closest to making a sale?" "What could have been done at that point?" It should be noted that questions such as these are specific: they ask for observation of a concrete instance.

The leader must avoid beginning with such questions as "Well, What did you think of it?" "Was Joe a pretty good salesman?" These take the mind away from specific and ask for analysis of an overall job before the men have had a chance to consider

specifics. The more exact the question; the more probable that thinking and discussion will start. In no single session can all sales points or procedure be considered. The leader must determine what he wants to emphasize and proceed accordingly.

It is also a good idea to turn to Bill after some discussion and say, "Bill, how did it feel to be taking your customer's part?" "Do you see any better how she felt?" "Do you think you could come closer to selling now?" Follow this with letting Nick or Jack take over the customer's role and letting Bill try. Let the men talk and analyze the sale to their full desire. It is the discussion around this specific instance that carries much of the value of this procedure.

Every sales manager will find variation to this method, but one major point should be held in mind: The situation used had its foundation in reality. The second major point is that the entire session is centered on a single incident and portrayed in a realistic manner from several points of view. It is of far greater value to investigate fully one instance than to work with several on a more superficial basis.

The role-playing method of sales training works best when the situations are real and the players develop their own devices. The planned and rehearsed demonstration will fail to carry the sense of reality that this spontaneous group project can create. Try one at your next sales meeting.

New Ice Plant to Serve Vegetable Growers

PLANS for construction of a $250,000 ice plant at Hereford, Tex., were announced recently by Rip Underwood of Amarillo and Reginald Williams of Idabell, Okla., partners in the new Hereford Ice Co. The plant is to serve the surrounding agricultural area which has long been in need of bulk ice facilities to facilitate shipment of the large production of lettuce, carrots, cantaloupes and other vegetables. Mr. Underwood is an Amarillo financier and oil man and Mr. Williams operates a number of ice houses near his home town in Southeastern Oklahoma. He will assume managership of the plant when it is completed.

New Plant Supplies Ice to Maine Fishermen and Processors

A NEW ice making plant which will supply ice to Rockland fishermen and others fishing off the Maine Coast and to fish processors within and nearby the city has been opened by F. J. O'Hara & Sons, Rockland, Me. This company occupies an important position in the fishing industry in New England. They have plants at Boston Fish Pier as well as at Portland, Me., and operate an affiliated concern, Frank R. Neal Co. at Eastport, Me. Two 58-ft. O'Hara draggers, the "Trinity" and the "Queen of Peace", are fishing out of the plant at Eastport. Other O'Hara boats are the 82-ft. draggers "Villanova," "Jeanne D'Arc" and "Notre Dame." The "Araho" is a 90-ft. fishing boat.

The O'Hara wharf at Rockland, as shown in the aerial view, includes a packing plant, seen in the lower right, with a freezing tunnel connecting it with the storage house. The building has a 35-ton ice making system and a 50-ton ice storage. The house at the end of the dock, just beyond the quonset huts, is "Journey's End," the living quarters of Mr. and Mrs. O'Hara when in Rockland.

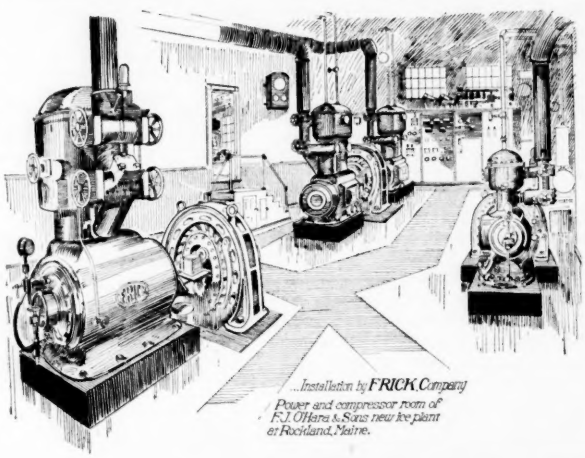
Near the upper left-hand corner of the view is the 150 by 80-ft. brick building, with square steel windows, which houses the new ice-making system. There are two tanks, with a total capacity of 120 tons per day. Of this, 60 tons are white ice. Cans are handled in grids holding 13 each. The storage room has a capacity for 450 tons.

Aerial view of O'Hara ice-making plant at Rockland, Me.

Refrigerating Equipment

Four Frick compressors are used in the new ice plant. Two 10 by 10's are tandem-coupled to a 200 hp Ideal synchronous motor placed between them, while a third machine of the same size is driven by a similar motor of 100 hp. For standby service there is a 7 by 7 machine, for which a 60 hp motor is provided.

The air view was furnished through the courtesy of the Atlantic Fisherman, and the drawing of the machine room through the Fishing Gazette.



...Installation by FRICK Company
Power and compressor room of F.J. O'Hara & Sons new ice plant at Rockland, Maine.

Modern delivery equipment goes hand in hand with new vending station for selling processed ice.

What Does It Cost to Process Ice?

The Eastern States Ice Association wanted to know, so a survey of nine plants was made. The findings published here will interest every ice distributor.

A SURVEY on costs and production expense of processed ice made among nine member companies of the Eastern States Ice Association provides some valuable information on prices, volume, containers and other practical pointers. These nine companies form a representative group of both small and large concerns. One is located in Maryland, one in Washington, D. C., three in Pensylvania and three in New York. A summary of the results of the survey was presented at the recent convention of the Eastern States Ice Association by Joseph T. Carson, T. I. Carson Inc., Philadelphia, as follows:

Crushed or Sized Ice

Capacity per hour: Nine companies total 185 tons per hour.

Size canvas containers used: Eight plants use the 100 lb. canvas bag. One plant doesn't use canvas.

Type container used other than paper or canvas: Eight have no other container; one plant uses a wooden box.

Price charged independent dealers per hundredweight: The price ranges from 27½ cents up to 56 cents per 100 lbs. The average for the nine plants is 38 cents.

Delivered price per hundredweight to hotels and restaurants: Prices range from 40 to 90 cents with an average top price of around 71 cents. One company reports a sliding scale, the higher the volume of ice taken, the lower the price.

Estimated average container cost per hundredweight per trip by using canvas bags: The cost considered here covers depreciation of bags and the expense for bags lost or stolen. Range in cost is from 1½ cents to 5 cents.

Method used for washing canvas bags: Four companies use some sort of spray device; four have no mechanical means and one company uses an outside laundry, sending bags out approximately every fifth trip.

Percentage of metal bottom bags used: Three said 100 percent; three use no metal bottoms at all, and one said 50 percent, another 35 percent and another 5 percent. One manufacturer comments that canvas bags with metal bottoms probably have a longer life but the expense, in some cases because of the higher cost of the bag, counteracts the fact that they have a longer life. If a high percentage of bags are lost or stolen in most cases, it does not pay to use the more expensive container.

Labor cost per hundredweight for processing sized ice: The eight who reported show costs ranging from 2½ to 10 cents, with an average of 5.4 cents.

Different sizes of processed ice made: Most of the companies have three sizes; one has four, and another has five.

Percentage of snow ice loss: The range is from three to 20 percent.

Disposal of snow ice: Five are dumping it all; four others are both selling and dumping.

Oversupply in one size: Six report that they have an oversupply, and three report no oversupply. Three report an excess in the large size and two report snow as in excess; one reports an oversupply in medium

TABLE I—SUMMARY OF REPLIES TO QUESTIONNAIRE ON SIZED ICE

COMPANY	A	B	C	D	E	F	G	H	I
Make of Equipment	Lilly G.W.	G.W.	Lilly	Lilly	G.W.	G.W.	Lilly G.W.	G.W. Lilly	G.W.
Capacity per hour	L. 100 cks. G.W. 50 cks.	10 tons	8 tons	15 tons	10 tons	30 tons	30 tons	27 tons	34 tons
Size of canvas bags	100 lbs.	100 lbs.	100 lbs.	100 lbs.	100 lbs.	100 lbs.	100 lbs.	None	100 lbs.
Containers other than canvas or paper bags	None	None	.....	None	None	None	None	Wooden box	None
Dealer price per cwt.	Crushed 27c Sized 35c	26 ⅔c 35c	.40c	.40c	.27½c	.56c	.40c	.35c	27c crushed 35c sized
Price delivered to Hotels	.60c and up	.40c-.80c	.40c-.70c	.60c	.40c-.50c	.65c-.90c	Sliding scale	1st 600 lb. .75c Next 600 lb. .65c Additional .40c	.50c-.70c
Canvas bag cost per trip	2½c to 3c	5c	Don't know	3c	2c	3c	1½c	.....	1½c
Method of washing bags	None	Spray device	None	Spray device	Outside Laundry	Spray device	Spray device	.....	By Hand
Percentage of metal bottom bags used	5%	100%	100%	50%	None	35%	100%	None	None
Processing labor cost	Summer 2.5c Winter 4.5c	3½c	3c	3½c	Unknown	10c	10c	4c-5c	6c
Number of sizes	3	3	3	5	3	3	3	3	4
Percentage of snow ice lost	15%	20%	10-15%	16-20%	20%	8%	.....	12-15%	3%
Snow dumped or sold	Mostly Dumped	Sell	Dumped	Dumped	10% Sold 10% Dumped	Dumped	Sell and Dump	Dumped	Sell and Dump
Oversupply of any size	yes	No	Yes	Yes	Yes	Yes	No	No	Yes
What size	Stove	.....	Snow	Pea or Nut	Snow	Large Nugget	.....	.....	Egg
Canvas bags for dealers	Yes	No	.....	No	Yes rental ½c per trip	Yes	No	Wooden boxes	Yes
Dealers financially responsible	Yes	.....	.....	.....	Yes	Yes	.....	No	No
Containers used for dairies	None	Canvas bags	None block ice	Canvas	None	50 lb. Paper Canvas 50 lb. Canvas		Wooden boxes	.....

size. These and previous questions bring out the fact that snow loss is fairly high. The fact that some are dumping and some are selling and dumping, shows that an oversupply of snow applies in nearly every case.

Supplying dealers with canvas bags: Four report that they do not; four report that they do and another has no dealers.

Holding dealers financially responsible for losses: Two companies hold them responsible for the bags, one doesn't, and the other charges them on a rental basis.

Type of container used for delivering ice to dairies: Three report deliveries in canvas bags, one reports both canvas and paper bags; one delivers block ice only, another delivers in a wooden box and the three remaining do not have this type of trade.

Ice Cubes

Price per hundred pounds for cubes in canvas bags to dealers: The price ranges from 55 to 90 cents with one reporting $1.25.

Price to dealers in various size paper bags: Answers to this question listed a variety of sizes of bags and also prices; one using 10 lb. bag charges 20 cents; three using a 25 lb. bag; two—30 lb. bag and another uses 40 lb. bags. Others use the 50 lb. bag with varying prices of 35, 40 and 65 cents. Two others use odd sizes—35 lb. bags at 35 cents and 30 lb. bag at 35 cents.

Prices delivered to hotels and restaurants in various size paper bags: Most hotel deliveries in paper are in 50 lb. paper bags. Three compan-

TABLE II—SUMMARY OF REPLIES TO QUESTIONNAIRE ON ICE CUBES

COMPANY	A	B	C	D	E	F	G	H	I
Make of Equipment	F. E.	G.W.	G.W.	G.W.	F. & E.	F. & E.	G.W. Ball	G.W. F. & E.	F. & E.
Dealer price per cwt. in canvas bags	60c	60-90c	None	$1.25	55c	70c	80c	.....	60c
Dealer price in paper bags	10 lbs. 20c 25 lbs. 30c 50 lbs. 40c	None	35 lbs. 35c	25 lbs. 40c 50 lbs. 65c	.....	70c per cwt.	.....	30 lbs. 35c	25 lbs. 30c 50 lbs. 45c
Price to Hotels, etc. in paper bags	90c to $1.20 per cwt.	None	35 lbs. 50c	50 lbs. 85c	None	.90-$1.30	Tubs	30 lbs. 50c	$1.20
Other outlets	No	Yes	No	No	Yes-Liquor Stores	Yes-During holidays	Yes-Liquor Stores	Yes	Yes-Drug Stores
Cube ice domestic delivered	10 lbs. 75c 25 lbs. 1.25 50 lbs. 2.00	None	35 lbs. 75c	25 lbs. 50c	Peck .50c ½ bu. .75c 1 bu 1.00	25 lb. $1.00	10 lbs. 40c Tub 80c	30 lbs. 50c	25 lbs. 1.25
Labor cost in processing	7.3c Summer 10.7c Winter	7.3c	Don't know	1 man - 4 tons 9 hours	No record	22½c	9c	8½c	6c
Percentage snow loss per cake	30%	26%	33⅓%	33⅓%	30%	30%	33⅓%	35%	25%
Price increase after mechanical installation	No	Yes	No	No	No	No	Yes	No	No

TABLE III—SUMMARY OF REPLIES TO QUESTIONNAIRE ON PAPER BAGS

COMPANY	A	B	C	D	E	F	G	H	I
Sized ice in paper bags	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size of bags	10 lb. 25 lb. 50 lb.	6½ lb. 14 lb. 50 lb.	25 lb. 45 lb.	50 lb.	Peck ½ bu. Bushel	10 lb. 25 lb. 50 lb.	30 lb.	½ bu 22 lb. 1 bu. 44 lb.	10 lb. 25 lb. 50 lb.
Dealer price various size bags	10 lb. 20c 25 lb. 30c 50 lb. 40c	None	None	60c per cwt.	Peck 4c ½ bu. 5c bu. 7½c Dlrs. buy bags and fill them	50 lb. 28c	None	½ bu. 18c 1 bu. 28c	25 lb. 20c 50 lb. 40c
Price delivered to Hotels, etc.	None	None	20c 25 lbs. 35c 45 lbs.	50c for 50 lb. bag	None	50 lb. 35–45c	.....	½ bu. 25c 1 bu. 40c	25 lb. 30–40c 50 lb. 60–80c
Type of bag tie	Wire	Stapling Machine	Metal tie	Wire	Wire and Metal strips	Wire	.....	Wire	Wire
Paper bag strength	10 lb. 50–50 25 lb. 60–60 50 lb. 60–60	.....	60–50	60–60	60–60	10 lb. 50–50 25 lb. 50–50 50 lb. 50–60	.....	60–50 60–60	60–60
Do you use bag identification marking?	No	No	Yes	Yes	No	Yes–lines	Yes	Yes	No
Labor cost in bagging	Unknown	?	Negligible	2½c per bag	?	12c	.....	2c per bag	16c

ies have no deliveries in paper bags to this type of trade. The range is from 90 cents to as high as $1.50 per hundred pounds.

Use of drug stores, delicatessen stores and other retail stores as outlets for the sale of cubes in paper bags: Three do not use this type of outlet at all; five do—some of whom distributed to liquor stores; one company only during holidays. This type of outlet, it was pointed out, doesn't help the tonnage factor because there is not enough volume, but it is usually high priced ice, for which more can be charged due to the convenience that is being supplied to the public.

Price for special domestic deliveries on various type paper bags: A wide variation in price range is shown in the answers to this question. Two companies use a 10 lb. bag —one at 40 cents the other at 75 cents; one sells a 12½ lb. bag for 50 cents. The 25 lb. bag seems to be the most popular, five companies using that size, but here again, prices varied, at 50 cents, 75 cents, $1.00 and two as high as $1.25. One company sells a 30 lb. bag for 50 cents; another sells a 35 lb. bag for 75 cents; another sells a 50 lb. bag for $1.00 while another sells a 50 lb. bag for $2.00. It will be noted that prices for domestic delivery are definitely low but, on the other hand, selling a 26 lb. bag for $1.25 seems like a pretty high price.

Labor costs in production and bagging of cubes: The range in cost runs from 6 to 22 cents, with an average cost of 10.3 cents.

Estimated percentage of snow loss for the 300 lb. cake in the production of cubes: Answers to this question showed all the companies much closer together, running between 25 and 35 percent.

Increased prices where mechanical ice makers were installed: Seven report no increase; two report that they did not increase prices, but their sliding scale resulted in higher prices to customers when volume was reduced.

Paper Bags

All nine companies report that they package sized ice in paper bags.

Size bags used: Answers to this question really showed a variety: 6½, 10, 14, 25, 30, 45, and 50 lbs., the peck, half bushel and bushel—from small to large.

Prices to independent dealers per bag for various size bags: Four companies do not sell paper bags in this manner; another charges 20 cents for 10 lb. bag, and others 18, 20, and 30 cents. In the 50 lb. group, prices were 28, 30 and 40 cents.

Prices delivered to hotels for various size bags: For 25 lb. bags, the range is from 20 to 40 cents and for 50 lb. bags, from 33 to 80 cents.

Type of ties used in sealing the bag: Seven use the wire tie; one uses a stapling machine; another uses a tie with metal strip inside the bag, over which the bag is closed and folded.

Strength of paper bags found most satisfactory: The 60 strength seemed to be the most popular, although a few used the 50 strength.

Use of special marking on bags to distinguish sized ice from cube ice: Six have some way of distinguishing cubes from sized ice. Most of them have the words "Cubed Ice" or "Sized Ice" printed on the bags. One uses diagonal lines in red.

Labor cost for bagging ice in paper bags per 100 lbs: There were four replies: one at 2 cents; one at 2½ cents, one at 12 cents and one at 16 cents.

City Products Names New Vice-Presidents

A SERIES of promotions of members of the staff of City Products Corp., was announced after the annual meeting held in Cleveland, April 20. Five new vice-presidents approved by the Board of Directors are: R. W. Croker, H. S. Humason, L. L. McCoy, G. H. Genger and T. J. Beck. In addition, F. F. Rhode and Wm. A. Schmid, formerly vice-presidents were elected senior vice-presidents.

William J. Sinek re-elected president, told the annual meeting that earnings of the dairy division had shown a substantial increase following the opening up of several new sales areas. He said 1949 had been a very satisfactory year, with earnings of $5,396,000, only $309,000 less than in 1948.

Governor of Texas Proclaims Official Ice Day

TO commemorate the 100th anniversary of ice manufacturing in the country, Governor Allan Shivers called on all Texans, by official proclamation, to observe Texas Ice Day on May 17. The governor noted in his proclamation that Dr. John Gorrie of Florida designed and built the first ice-making machine and in 1875 the third machine was built and installed in Jefferson, Texas.

Price War Damage Suit

A DAMAGE suit claiming nearly $200,000 damages as a result of a price war has been filed by the Laredo Power & Light Co. of Laredo, Tex., against the Longoria Brothers, owners of the City Ice Co. The case has been postponed to July 10, 1950.

Ice Companies Indicted—Charged With Violating Antitrust Act

THIRTEEN ice manufacturing concerns operating in New Orleans, La., and the same number of officers of the companies have been indicted by a federal grand jury on charges of violating the Sherman Antitrust Act in connection with the sale and distribution of ice in the New Orleans area.

The companies and company officers indicted are: The New Orleans Ice Delivery Corp.; The New Orleans Cold Storage and Warehouse Co. Ltd., and W. A. Moore, secretary; Pailet Industries, Inc., and Irbin Pailet, president; Morgan Ice Co. of New Orleans, Inc., and S. R. Morgan, Jr., president; Republic Ice Manufacturing Co. Inc., and Dominick Graffagnino, president; Washington See-Royal Products, Inc., and Peter Graffagnino, vice president; the New Ice Co. Inc., and Benjamin T. Brown, vice-president; Pelican Ice Service, Inc., and T. S. Behre, president; Crystal Ice Service, Inc., and A. E. Wegener; vice-president; French Market Ice Mfg. Co. of New Orleans, Ltd., and S. P. Simone, president; J. W. Joachim, operator of the Home Ice Co.; J. E. Pottharst, Jr., operator of the Marine Ice Co.; Frank A. Herman, operator of Gulf State Distributing Co., and H. C. Johnson, operator of Ice Service Co.

After the indictment was returned Judge Herbert W. Christenberry set bond at $500 for each of the individual defendants and ordered summons issued for them to appear before United States Commissioner R. H. Carter, Jr., to post the bonds. United States Attorney John N. McKay said the maximum sentence under the act is a fine of $5000 or one year in prison or both.

After the charges were filed, Horace L. Flurry, chief of the Southwest office of the justice department's antitrust division, filed a civil action in federal court asking an injunction to restrain further alleged violations of the Sherman Act. The indictment charges that since 1943 the defendants have combined to eliminate competition in the sale and distribution of ice and the furnishing of icing services necessary to the preservation of substantial amounts of perishable products which move in interstate commerce.

The defendants are charged with pooling in the delivery corporation their entire production, allocating and limiting the production among themselves, fixing prices of ice and icing services, allocating customers, and restricting the transportation of ice into New Orleans from other areas of the United States.

Representatives of the justice department who presented the case to the grand jury stated that the delivery corporation is owned and controlled by the defendants and alleged that the combination of these normally competing manufacturers into a common pool eliminated competition.

The New Orleans Ice Delivery Corp. was organized in 1943 at the time the Office of Defense Transportation was ordering and requiring ice manufacturers and distributors to combine their deliveries in the interest of saving gasoline, rubber and delivery equipment as part of the war effort.

Displays Help Sell Iced Poultry

AN ATTRACTIVE profusely illustrated bulletin has been issued by Swift & Company entitled "Selling Displays Stimulates Chicken Sales." Designed primarily as a merchandising service for Swift dealers it could also be used by ice distributors as a means of publicizing their crushed ice service for icing poultry. Various store displays of poultry on ice are shown, also pictures illustrating how to prepare a bed of crushed ice and place the dressed birds in the display case.

Merchandising Information

MERCHANDISING Exchange, a new bulletin, has been issued by the Personnel and Marketing Department of the National Association of Ice Industries, as a national exchange of practical, workable ice and appliance merchandising plans that have been used successfully. The information is short and to the point. Readers interested in more details of specific programs discussed are invited to write for additional information.

Among the activities covered in the first issue are: Merchandising 5 lb. packages of ice cubes from low temperature cabinets in drug stores and other retail outlets; printed calling-size-cards offering bearer a bag of sized ice; furnishing sized ice for shipping poultry to processing plants; refrigerator service rental plan; and special merchandising of ice cubes.

New Florida Shrimp Beds Will Increase Ice Volume

TWO promising new shrimp beds nearer Fort Myers, Fla., than the Dry Tortugas grounds have been reported. This is of much interest to the ice industry in that section because of the amount of ice used for processing and preserving the shrimp catch. Experienced shrimpers call this find one of the most important discoveries in the industry. The shrimp are of pinkish brown variety and phenomenally large, running 16 or 18 to the pound, measure 4½ inches long, and are extremely thick. Two shrimp boats have been chartered to locate the beds. Ice for the search was provided by the City Ice & Fuel Co. of Fort Myers.

Dressed birds are placed in even rows and covered with crushed ice. After rows have been completed, loose ice is sprinkled around top row.

The Ice Refrigerator Is No Longer a Drip

TO COUNTERACT adverse publicity and the assumption by many people that ice refrigeration in the home is old-fashioned, a feature article, inspired by John G. Pool, Jr., Assistant Advertisng and Publicity Manager for The National Association of Ice Industries appeared in a recent issue of The Washington (D.C.) Post. Under the heading "The Ice Box is No Longer a Drip! No Noise, Breakdowns or Defrosting." the article is illustrated with a picture of a modern refrigerator, and reads as follows:

CONSIDER the ice-box. (We're not talking about the refrigerator. We're talking about the ice-box. It's a different item entirely. The ice-box takes a huge cake of ice in its top section, at about the spot where the freezing compartment goes on your refrigerator.)

Well, it seems that a couple of weeks ago we ran a picture in the garden section portraying, among other things, the old-fashioned ice-box. Some not entirely complimentary remarks were made about the drip pan, the bane of every housewife's existence a couple of decades ago.

This displeased John G. Pool Jr., an earnest young man who used to work here and who is now affiliated with the National Association of Ice Industries. "Objection!" hollers Pool. "The fact is, the drip pan and all the other 'bugs' in the old ice-box are eliminated in its direct descendant—the modern air-conditioned ice refrigerator.

"Here's a picture of this illustrious offspring—no family resemblance is there? And instead of filling a drip pan, this sleek beauty drains directly into the plumbing or through an opening to the outside of the house." Pool's only warming up. Don't go 'way.

"Ninteen fifty's ice refrigerator," he says "not only looks good and behaves neatly, but even has several exclusive advantages. It gives food all three essentials—constant cold, proper moisture, and clean, washed air. It doesn't dry out foods, and there's no transfer of flavors. (You can put butter and limburger cheese on the same shelf, uncovered, and each will keep its own personality.)

"I could go on," Pool says, and does so. "The ice refrigerator has no breakdowns, no noise, and no defrosting. It provides all the ice you need for entertaining. Well-insulated, it needs ice only every four to seven days. None of its mechanical cousins can match its low price.

"Yes, the ice man has spruced up, too. Now he wears a neat uniform and delivers the ice in a drip-proof bag.

The modern ice refrigerator.

"Ice still does the refrigeration job in 11 million American homes. In short, the old ice-box may be a vanishing item, but its progeny carry on nobly." O.K., Pool. O.K.

Ice Company Installs Fully Automatic Controls

THE City Ice & Beverage Co., Battle Creek, Mich., is the first company in Michigan to install fully automatic controls on its ice manufacturing machinery. It now offers around-the-clock service from its ice vendors, and ice may be obtained in 25 or 50-pound blocks, 25-pound bags of crushed ice, and 12½-pound bags of cubes. The vendors are part of a $15,000 renovation program nearing completion at the company's main plant, aimed at putting the ice manufacturing and retail operation on a cost-cutting, automatic basis.

Delivery of ice will be made in water-resistant paper bags, replacing the canvas pouches long used. Enclosed refrigerated trucks will eventually replace open trucks, which will assure cleanliness and reduce melt-shrinkage. The installation of automatic controls on present ice manufacturing equipment will hike daily summer-time production substantially over the average 65 to 75 tons produced before.

Iced Tea Posters To Sell More Ice

WITH the cooperation of the Tea Bureau the Public Relations Department of the National Association of Ice Industries offers full-color truck posters urging ice customers to drink more iced tea. The reprint reproduced above gives an idea of the finished product. Actual dimensions of the poster are 20½ x 30½ in. made especially to fit frames on trucks throughout the ice industry. The Tea Bureau has agreed to furnish these posters free of charge to members of the ice industry and the Public Relations Department will assist in their distribution.

While designed primarily for use on trucks, the posters can be displayed at other locations such as platforms, vending stations, offices, and sales rooms. Here is a good opportunity, at practically no cost, to promote the sale of ice.

Hot Water Removes Ice from Refrigerator Cars

EVER since the first refrigerator car was put into service one of the major problems for the operating companies during the fall and winter months has been cleaning out the dregs of ice preparatory to the installation of heater service.

Approximately three man hours were required to clean a car manually. This consisted of the hand-tossing of chunks of ice from end bunkers; a back-straining job for even a husky man and obviously an ever-present safety hazard, and the scooping of body ice out car doors. In fact, when all the body ice in a car could be scooped out workmen were getting off easily; hard, equipment-damaging chopping was necessary in cases where ice had melted and then refroze in the floor racks.

—Union Pacific Railroad Photo

While O. I. Larsen, right, assistant general manager of Pacific Fruit Express, and P. S. Toay, center, PFE plant manager at North Platte, Neb., look on, a workman directs a flow of hot water into the end bunker of a refrigerator car to clear it of ice. Before installation of the new system, it would have been necessary for the workman to descend into the bunker and toss out the ice by hand.

During the past few years refrigerator car companies have been constantly experimenting with methods to speed up and increase the efficiency of ice removal. Steam has been used with mediocre success. It was found that steam worked quite well when directed into the confining quarters of end bunkers but its efficiency was highly debatable against body ice in the spacious dimensions of a "reefer's" interior where it was difficult to concentrate the hot, billowing mist.

In 1943 Pacific Fruit Express, jointly owned by Union Pacific and Southern Pacific railroads, began to work with hot water and today, after six years of trial and re-trial, company officials are satisfied that the most efficient method of ice removal has been developed. As a result, a hot water cleaning system capable of accommodating 40 cars or 20 on each of two 85-car cleaning tracks has been established at North Platte, Neb.

Hot water at a temperature of 190 degrees is furnished via a 15,000 gallon storage tank from three huge boilers in the Pacific Fruit Express ice plant at that point. Enough hot water is provided to supply 40 gallons per minute through each of five hose outlets.

O. I. Larsen, assistant general manager of PFE, estimates that the hot water method cuts to one man hour the time necessary to clean a reefer or, in other words, it is at least three times as fast as the manual method. Mr. Larsen anticipates further efficiency with the development of a more suitable nozzle.

Armed with 100-foot lengths of hose carried in the car tops, it is unnecessary for workmen to enter the bunkers. This, of course, eliminates the old hazard of a chunk of ice falling back on the tosser working in the cramped confines of a bunker. The water, after it seeps down through the bunker ice, pours out through car drains into concrete gutters flanking the cleaning track. In this instance, drains are also cleared of any frozen ice at a point not easily reached by manual labor.

Hot Water Better than Steam

In the car interior hot water holds an advantage over steam in that it can be concentrated. Also, the hot water melts frozen ice in and under the floor racks virtually eliminating the car damage that previously resulted from manual chopping or use of cumbersome salamanders.

—Union Pacific Railroad Photo

With 190 degrees hot water a workman quickly melts away the remains of body ice in a Pacific Fruit Express refrigerator car at the company's new cleaning installation at North Platte, Neb. The new system is quicker and easier on equipment than the old scooping-chopping method.

Finally, it is possible for one man to clean more than one car at a time by the simple expedient of dropping a running hose into an end bunker and moving on to another car while the hot water flushes away the ice.

North Platte, on Union Pacific's main line from Omaha to the west, was chosen for installation of the hot water system because of its strategic location. Westbound reefers out of Omaha and out of Kansas City, Via Marysville, Kan., both move through this point. Once cleaned, cars can be quickly moved westward to transport fruits and vegetables under heat during the winter months from western areas to the east.

Reports From Unit Ice Associations

Eastern States Ice Association Annual Convention

THE 18th annual convention of the Eastern States Ice Association held in Atlantic City, N. J., at Haddon Hall Hotel, April 12-14, attracted a good attendance of ice manufacturers and dealers, exhibitors and visitors. Representatives were present from the states of New York, Pennsylvania, New Jersey, Delaware, Virginia and the District of Columbia. In addition to the very interesting business program, various social events were planned.

One of the enjoyable social affairs was an open house held early Wednesday evening in the Garden room of the hotel. This was a get-acquainted party arranged by the program committee for all who were attending the convention. It was a great success and all those who attended express their full appreciation.

Changes in the Industry

Opening the convention, H. Stewart Dunn, president of the association, presented an outline of changes in the ice industry which call for new methods in machines and equipment and a new approach to the selling end. One of the marked changes, he said, is the definite increase in demand and sales of crushed and sized ice, the volume of which is increasing steadily. Another problem which faces the industry is increased production costs, particularly that of handling ice into and out of storage. This has reached such a point, he said, that the economy of storing of ice for peak demands has become questionable in many places. A recent decision of the Pennsylvania Supreme Court in ruling that the production of ice was not a manufacturing business, he pointed out, has had a direct bearing on taxes an insurance. He advised all ice manufacturers in Pennsylvania to familiarize themselves with the results of this decision as it applies to their business.

Report of the Secretary-treasurer, Samuel H. Freer, gave evidence of a well-managed association, functioning for the benefit of the members. The treasurer's report showed a favorable balance with no unpaid bills on hand. As part of this report, Mr. Freer touched briefly on the accomplishments of the association which is now in its eighteenth year. He referred also to the predecessor of the Eastern States Association and characterized the present organization as a "lengthening shadow" of the original. Mr. Freer, himself, has been actively identified with the ice industry since 1897 at which time he began work for an ice company in Brooklyn, N. Y. Looking to the future, he said there was much to favor an optimistic viewpoint. There would always be problems, but on the other hand it offered favorable opportunities for reasonable success.

New Officers for 1950

President, George M. Currie, Poughkeepsie, N. Y.

Vice-president, James B. Post, Wilkes Barre, Pa.

Vice-president, Samuel H. French, Philadelphia, Pa.

Vice-president, H. H. Snyder, Alexandria, Va.

Secretary-treasurer, Samuel Freer, Philadelphia, Pa.

Selling Appliances

L. A. Stark, Progress Refrigerator Co., Louisville, Ky., presented a well-developed paper on selling appliances. He told the ice men that it is not practical for them to attempt to merchandise a wide variety of appliances such as radio and television sets because of the necessity of providing service and keeping customers satisfied. Household appliances, he reminded them, require service and this in turn requires delivery and repair facilities and a considerable investment not only in stores but in labor equipment for installation and handling.

The subject of refrigerator rental was ably discussed in a paper presented by J. R. Stevens of the Ice Cooling Appliance Corp., Morrison, Ill. Mr. Stevens pointed out that renting refrigerators provide an opportunity for placing a number of them in service and that all distributors should thoroughly explore their possibilities. These rental plans, he said, have been found successful by many ice companies and in nearly every case where tried they have proven successful.

Safety in the Ice Industry

Safety in the production and delivery of ice was discussed by M. deTarnowsky, safety engineer of the Schaefer Brewing Co., Brooklyn, N. Y. The speaker presented methods of preventing accidents applied not only to the ice industry but to all industries. To summarize briefly the methods employed in his own company to reduce accidents, he quoted figures to show that these efforts had paid. The Schaefer Co., he said, operates 425 delivery trucks and employs 800 to 1000 delivery men. Here, obviously, is a situation which could easily develop an accident ratio which, unless checked, could run to high figures, he said. To meet the situation the company has made use of practical accident prevention methods and complete instructions to workers.

It is an indictment of efficiency that in both the brewing and the ice industry the safety record has been bad, he said, but through organized efforts the situation is improving in both fields. The speaker criticized the thinking of some managers who feel that their accident problem is solved when adequate accident and indemnity insurance is provided and casualties become the problem of the insurance companies. The catch in this, he said, is that there are hidden losses in most accidents not covered by the insurance policy and also increase accidents and a tendency to increase insurance rates.

Mount Taylor Speaks

Mount Taylor, executive secretary of the National Ice Association brought to the convention his usual forceful and dynamic presentation of the present state of the ice industry. Predicting things to come, Mr. Taylor said that it is not easy and each individual must find out for himself. If it is found that sales are declining, it must be determined why and to what extent.

Sales surveys, he said, are made by the National Association twice each

year based on questionnaires mailed to ice companies all over the United States and the accuracy of these surveys is reflected in the narrow spread between the predicted and the actual figures developed at the end of the season. Commenting on the decline of about 12 percent of ice sales, he said that sales in other industries have also declined from 10 to 12 percent. He offered as his opinion, based on the close study of conditions, that the contributing factors were both economic and weather conditions and, to some extent, to the sale of mechanical refrigerators.

To counteract this drop in sales, he said, that there are many new fields for the sale of ice such as vegetable and poultry icing and other food commodities that must be held at proper temperature and humidity conditions at all times, for all of which ice is a suitable and proper refrigerant. While it requires work to develop new markets and secure new business, such efforts are well repaid. He emphasized the need for an expanded research program for developing and discovering new uses for ice. Such a program, he said, is now carried on by the National Association but it also should be sponsored by all state and regional associations.

Survey of Costs and Production Expenses

Results of a survey of costs and production expenses of nine member plants on processed ice was presented by Joseph T. Carson of T. I. Carson, Inc., Philadelphia. The tabulated results of this questionnaire were displayed on large charts and explained by Mr. Carson, who pointed out that while the data was not offered as representing the industry as a whole, they represented a good average cross-section indicating how processed ice is developing in the section of the country covered by the investigation.

On the data brought out in this survey the price of ice cubes in canvas bags range from 55 to 80 cents per 100 lbs. Delivered to hotels and restaurants in various sizes paper bags, the prices range from 20 to 40 cents per 100 lbs. Delivery price of special domestic deliveries of 25 and 50 lb. bags range from 75 cents to $1.25 each. The questionnaire on sized ice was very complete and brought out some very interesting answers. On the question of cost per 100 lbs. for producing sized ice, the answer was from 3 to 6 cents per 100 lbs. The size of bags used was shown as ranging from 6½ to 50 lb. capacity.

A dramatic skit entitled "The Holey Cubes", directed by C. C. Hofberger Co. of Baltimore, Md., was presented to show how easy it is for ice distributors to lose a customer through the small machine producing sized ice and how such competition can be met by the ice manufacturer who understands and properly explains the advantages of ice.

Frank W. Lovejoy of the Socony Vacuum Oil Co., New York, in a very interesting address on the general business situation, called attention to possible new markets for ice, and in their search for these new markets, he advised ice company executives to get away from their offices and go to work in the field to find out what is going on and what people are thinking. It is what the people decide rather than the ice executive which will determine the course of the ice industry in the future. He suggested the building of attractive ice stations at strategic points throughout the country, arranged to provide quick and dependable service, convenient for motorists to enter and be served and leave the place in the shortest possible time. He said he had noticed that many ice service stations which he had seen in his travels were not only uninviting but were inconvenient for customers and he advised them all to stop worrying about the new ice cube machines and to get out and tell their story and explain the advantages of ice.

The National Ice promotion program was discussed by Guy W. Jacobs. Mr. Jacobs touched briefly on the financial side of the program and outlined the advertising materials and media being used and to be scheduled in the current 1950 advertising program.

Mountain States Association Holds Annual Meeting

THE 1950 convention of the Mountain States Association of Ice Industries held at the Cosmopolitan Hotel, Denver, Colo., April 26, 27 and 28, started off with a very enjoyable occasion. At a get-together party held at 6 o'clock in the Club Room of the Cosmopolitan Hotel, cocktails were served, followed by a chicken dinner with all of the trimmings.

President D. E. Woodson, Crystal Ice Co., Cheyenne, Wyo., started the Thursday morning meeting practically on time and after a short resume of the year's activities and the secretary's report, the rest of the morning session was taken up with two interesting papers.

Employee Relations

R. W. Wright, executive assistant of the Mountain States Employers Council presented a paper "How, As Small Operators, To Handle Our Employee Relations." This paper had some good sound information and was well received.

John W. Johnson, regional investigation supervisor, Wage and Hour Division, Kansas City, Mo., gave a discussion on the "Application of the New Wage-Hour Regulation." Mr. Johnson gave a very capable explanation of this new regulation.

The afternoon session, directed by vice-president Walter T. Elliott of the Albuquerque Ice Co., Albuquerque, N. Mex., was devoted to a panel discussion on Merchandising. L. L. Belcher of the Mountain Ice & Coal Co., Pueblo, Colo., acted as moderator assisted by the following: Walter T. Elliott, Albuquerque, N. Mex,; Frank Adams, Colorado Ice & Cold Storage Co., Denver, Colo.; F. J. Moeller, Consumers Ice Co., Colorado Springs; John McElroy, Pueblo Ice Co., Pueblo; T. H. Byers, Denver Ice & Cold Storage Co., Denver.

This discussion covered the following main parts (1) Pitfalls of processed ice (2) ice vending stations (3) Retail sales (4) Commercial sales (5) Driver training.

Annual Banquet

The annual association banquet was held Thursday evening with J. Reimer Espy presiding as toastmaster and Herman Feucht, vice-president of the American National Bank as the speaker. Mr. Feucht's address "The Road Back" was quite well received.

On the final day, excellent papers were presented by D. E. Woodson on "Relation Between Rising Costs, Decreased Demands and Competitive Markets" by L. P. Strain on "One Hundred Years of Progress."

At the final afternoon session, another panel discussion was held on "Everyday Problems of Ice Plant Operation with G. B. Thompson, Colorado Ice and Cold Storage Co., Denver, as moderator and the following members of the panel: George Schaeffer, Denver Ice & Cold Stor-

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age Co., Denver; D. W. Woodward, Denver; H. B. McCluskey, Polar Ice & Cold Storage Co., Denver; and J. Bruce Espy, Espy Ice Co., Denver. In this discussion, practically every phase of ice plant operation including compressors, motors, engines, condensers, wells, pumps, water, softeners, tanks, pipes, cranes, wires, buildings, insulations, floors and roofs were discussed and a conclusion reached on most subjects.

Officers and Directors

The following officers and directors were elected to serve during the coming year:

President, Walter T. Elliott, Albuquerque, N. Mex.

Vice-president, Henry Nadorff, Denver, Colo.

Secretary-treasurer, J. Reimer Espy, Denver, Colo.

Regional President, L. L. Belcher, Pueblo, Colo.

Regional Director-at-Large, Clarence Adams, Denver, Colo.

Board of Directors: D. E. Woodson, Cheyenne, Wyo.; A. M. Yard, Clovis, N. Mex.; J. Bruce Espy, Denver, Colo.; Dave Bier, Greeley, Colo.; P. S. Goan, Billings, Mont.; Lee P. Strain, La Junta, Colo.; George A. Allebrand, Colorado Springs, Colo.; Frank Adams, Denver, Colo.

Northwest Association of Ice Industries Annual Meeting

THE 31st annual convention of the Northwest Association of Ice Industries opened in regular form at the Winthrop Hotel in Tacoma, Wash., at 10 a.m. on March 30, 1950, and continued in session until late afternoon of March 31. The two sessions were attended by the largest group of ice dealer association members, visiting ice men, and supply and ice equipment factory representatives and jobbers that had attended a Northwest convention for a number of years. Both days of the convention were full of enthusiasm and the interest manifested held the attendance in session up until the closing hour of the final day.

The usual welcome to the host city was extended by the executive assistant to Mayor Faucett of Tacoma. Response to the welcome was made by Association President Croteau, after which reports of committees that served during the past year were made. Reports of the Treasurer and Executive Secretary were made as approved by the Auditing Committee.

The factory representatives and jobbers of ice supplies and ice equipment were introduced and allowed a limited time to mention the merits of their products. Some of these had displays on exhibition; others called attention to the illustrated advertising material available to those who might be interested.

Chicken on Ice

Representative of Swift and Company, Mr. Manack, held the interest of the convention throughout the very extensively illustrated talk on "Chicken on Ice."

Mr. Reed from San Francisco, who has been in the ice business since birth, his father and grandfather having retired from the industry as James came along to take his place in the only business he had ever known — the ice industry, spoke on his subject, "The Chicken Deal." In his discussion he brought out considerable detail in relation to the "Hydrocooler" manufactured by the Food Machinery Company. He also spoke about other interesting and instructive phases of poultry cooling.

Complete discussion of the Ice Marketing Institute was also brought into the convention program, and topics of interest came to general discussion in open forum, as directed by Mr. Reed. The subjects proved to be a valuable stimulant and food for new thought by most of the attendants.

Refrigerator Rentals

General discussion of the "Refrigerator Rental Plan" held the interest of those present. Mr. Ridley from Vancouver, B. C. said that the plan represented about 20 percent of the trade of his company, the Ridley Ice Company, Vancouver, B. C. Mr. Calvert, representing factories of the "Progress" refrigerator, from direct contacts he had made, said that rentals are definitely a very important factor in the marketing of ice. R. W. Davis of the Union Ice Company, San Francisco, spoke of the success his company was having with the refrigerator rental plans; his details of the different angles of the plans, opened the field for ice men who had not given the rental plans the consideration of merchandising.

High Qualities of Ice

Prof. Davis, the principal speaker for the morning session of the second day, gave an interesting and inspirational talk on ice. It has many high qualities he said, that many ice men do not realize. Its clarity shows that it is pure, it washes itself. It is one of the world's finest anesthetics used in the treatment of gangrene; it is also used in burn treatment. It is the world's best air conditioning unit. It is depended on by fresh fruit, and vegetables, fish, meat, poultry, bakery, and florists' markets. Ice also has specialized uses in the film and studio markets.

These and many other common uses of ice were brought to the minds of the convention. Prof. Davis also reminded his audience that they must sell the public on the uses of ice and its superiority over mechanical competition. Salesmanship, he said, is insurance for the ice business. To sell ice it takes enthusiastic leadership, trained personnel, up-to-date appliances backed by an aggressive selling organization.

Throughout his entire presentation Prof. Davis held the undivided attention of the entire assembly and a most enthusiastic and appreciative applause at the conclusion of his address exemplified sincere appreciation. He also offered the cooperation of his company, Union Ice of San Francisco, on any phase of help to dealers they might call for.

Domestic Ice Sales

Mr. Norman of Vancouver, B. C. in an extemporaneous talk mentioned that sales of domestic ice predominate over commercial sales in Vancouver; these were mostly controlled through a form of domestic contracts. He said in Canada the development of an advertising campaign on the uses of ice is now in progress and the ice dealers have established a National Ice Week. His company has developed a successful "Package Deal" contract to cover a period of two years; payments are arranged which include an initial small down payment, and a payment for a specified amount each month thereafter.

At the final session, Wm. L. Baker of Seattle announced the election of officers made by the Board of Directors. The next annual convention, he said, will be held in Vancouver, B. C. the date to be announced after the mid-year conference to be held in June at Aberdeen, Wash. He then

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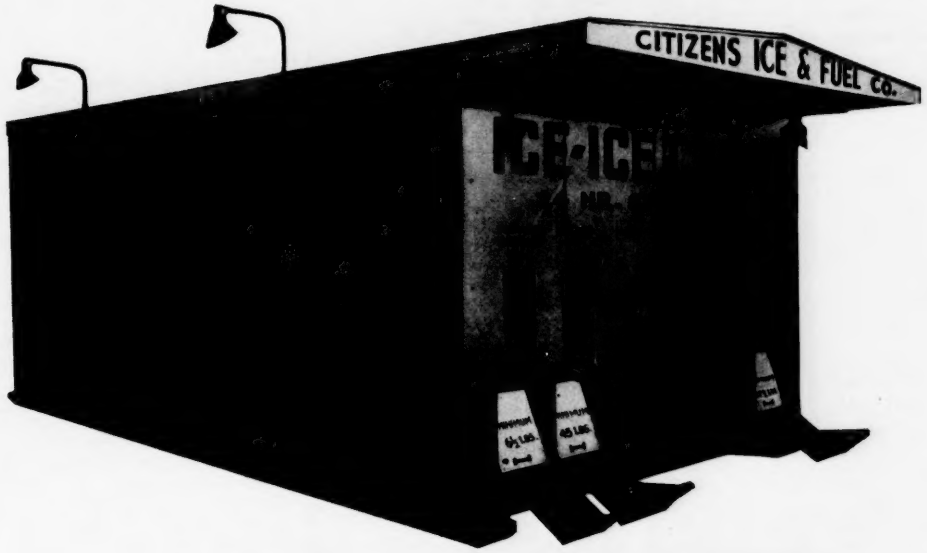

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During the Christmas Holidays last year the amount of premium, or bags of ice cubes, sold was greater than at any other period during the year including 4th of July weekend which is considered the peak of the ice sales season.

The more than seventy POLAR vendors in this vicinity have proved without a doubt that this modern method of merchandising ice is the way to slash your ice distribution costs and at the same time capture extra ice sales and extra profits —AUTOMATICALLY!

We extend a cordial invitation to you to come to Minneapolis to see for yourself just what can be done with automatic vending of ice.

Wire us—or call. Come to the Twin Cities and be our guest while you are here. We'll show you the many POLAR installations in the vicinity and we will take you through our modern plant where you can see how POLAR vending equipment is made.

You too can protect your ice plant investment by installing POLAR equipment. It will pay for itself in a very short time and will give you years of excellent service. POLAR is the standard for quality in ice vending machines.

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presented a summary of the convention, reviewing each subject and speaker and the splendid arrangements of the program, and especially mentioned the interest and enthusiasm which had prevailed throughout each session. He then turned the Chair over to the newly elected President, Ray Schneider, who briefly addressed the assembly in acceptance of the office as Association President and urged all members and friends to attend the mid-season meeting to be held in Aberdeen, Wash., during June, 1950.

The resolutions committee read resolutions thanking the Mayor of Tacoma and his police and fire departments, the Winthrop Hotel management, the committees having to do with all the arrangements for the convention, the speakers who had taken part in the program, and others who had contributed to the success of the convention.

Ray Schneider of Renton, Wash., was elected president for 1950.

Unit Ice Secretaries Hold Annual Conference

SECRETARIES of fourteen unit ice associations attended the annual conference conducted by the National Association of Ice Industries in Washington, D. C., May 5 and 6. V. A. Esphorst, secretary of the Missouri Ice Association and president of the group, officiated. After a welcome by Mount Taylor, NAII Executive Secretary, department heads of the National Association presented the overall picture to date in their respective fields. General discussion followed each presentation.

Changing Markets

C. P. Austin, Director of Engineering and Research, described the changing markets for ice. Guy W. Jacobs, present in a dual capacity as secretary of the Ohio Association and NAII Director of Public Relations, outlined problems and progress in national ice advertising. Francis X. Timmons, Advertising and Publicity Director, demonstrated the 1950 advertising campaign with reprints of ads now appearing, and told of current publicity efforts.

Daniel A. Prager, Director of Personnel Training and Marketing, led a group consideration of the national training school and some proposed marketing aids. General P. A. Weatherred, secretary of the Southwestern Association, covered ice service and public relations at the ice company level; as an outstanding case in point he gave details about the May 17 statewide Texas Ice Day. William T. Jobe, general counsel for the National Association, brought the secretaries up to date on the new wage-hour law and other pending legislation affecting the industry.

The conferees lunched together both days at nearby Ciro's Restaurant. Friday evening they had a choice of entertainment: a stage play or the Detroit Tigers-Washington Senators baseball game.

Secretaries attending, besides those named above, were: R. N. Milling, Delta States Association; Muriel Washburn, Florida Association; W. H. Oler, Ice Publicity Association of Baltimore; Robert W. Walton, Indiana Association; W. D. Wright, Illinois Association; Edward W. Jackson, Michigan Association; J. Reimer Espy, Mountain States Association; Lewis H. Powell, North Carolina Association; Ed H. Shea, Northwest Association; George English, South Carolina Association; and E. Dana Smith, West Virginia Association.

Kansas Ice Industries Merchandising Forum

THE first of a series of meetings of the Kansas Ice Industries Merchandising Forum was held in Chanute, Kansas, April 25. The meeting was attended by 42 very enthusiastic ice men from management, sales, and engineering departments from the southeastern zone. The meeting was conducted on the open forum basis and such interesting topics as local poultry icing, vegetable icing, appliance rental, vending equipment for ice were discussed.

Another forum meeting was held in Topeka, Kansas, on May 25. This meeting provided opportunities to see poultry being dressed and iced at one of the local processing plants. There also was a chance to see poultry and vegetable cases iced and merchandise arranged for sale.

Russ King Recovering

RUSSELL T. KING, secretary of the Kentucky Ice Manufacturers Association who suffered a paralytic stroke while in Evansville, Ind., some weeks ago, is now convalescing at his home in Louisville, Ky. While he is recovering nicely, it will be some time before he will be able to take over active office duties.

Merchants Adds Directors

THE Merchants Ice and Cold Storage Co., Louisville, Ky., has increased the number of members of its board of directors to nine by electing John E. Tarrant and George E. Egger as directors. Mr. Tarrant, a lawyer, is vice president of the Louisville Railway Co., and is a director of several other Louisville companies. Mr. Egger, a merchandising consultant primarily in foods and related lines, is a director and member of the executive committee of Minute Maid Corp. of New York.

Canadian Ice Machine Report Shows Profits Down

NET profit of Canadian Ice Machine Co., Toronto, Canada for 1949 was cut in two, the total being $45,490, or 40 cents a common share compared with $92,275, or $1.34 a share, in the previous year. Sales aggregated $3,025,000 against $2,993,000. Entry into a new and unfamiliar field along with evaluation and serious dislocation in Pacific coast business were responsible for the lower earnings, H. V. Shipley, president, says in the annual report.

Brewery Builds Ice Plant

CANADA'S most modern ice manufacturing plant is to be built in Hamilton, Ont., by the Peller Brewery Company on the east of the present brewery property. It is planned to spend $100,000 on the project and building is to start immediately. The new plant will turn out 50 tons of ice daily to meet the all-the-year-round demand in this area. During the summer months in particular there is often a shortage of ice in Hamilton and supplies have sometimes been shipped in from as far away as Buffalo. The company hopes to meet this demand with a modern plant and keep the business in the city.

Illinois Merchandising Meeting

THE Illinois Association of Ice Industries will hold a merchandising meeting at the Orlando Hotel, Decatur, Ill., Sunday, June 11. Everett Walters, sales promotion and advertising manager of Brown, Scott, Lynch Co. of Monmouth, Ill., will discuss advertising in its many aspects, particularly at the local level.

Cross-country Distribution

OF DU PONT "NATIONAL" ANHYDROUS AMMONIA

Prompt service from these Du Pont "National" Ammonia distributors

MASS.—Boston	A. E. Borden Co., Inc.
R. I.—Providence	Borden & Remington Co.
CONN.—Waterbury	Apothecaries Hall Co.
NEW YORK—Buffalo	Buffalo Brewers' Supply Co.
Rochester	Scobell Chemical Co., Inc.
Syracuse	Eastern Chemicals, Inc.
N. J.—Newark	National Oil & Supply Co.
MD.—Baltimore	Leidy Chemicals Corp.
D. C.—Washington	Henry M. Sweeny Co., Inc.
VA.—Norfolk	Refrigeration Supplies, Inc.
Richmond	A. R. Tiller Corp.
KY.—Louisville	Louisville Mill Supply
GA.—Savannah	Coastal Chemical Company
FLA.—Jacksonville	Apperson Chemical Company
Tampa	Graves Bros. Refrig. Supplies Co., Inc.
OHIO—Cincinnati	John H. Schafer, Inc.
Cleveland	The Cleveland Brewers Supply Co.
Columbus	Parke Pettigrew & Son Co.
ARKANSAS—Little Rock	Arkansas Foundry Co.
OKLAHOMA—Oklahoma City	Meyer-Blanke Co.
Tulsa	Meyer-Blanke Co.
IND.—Indianapolis	Wm. Lynn Chemical Co., Inc.
IOWA—Sioux City	Kennedy & Parsons Co.
MICH.—Detroit	Davis Supply Co.
MINN.—Minneapolis	Vincent Refrig. Supply Co.
St. Paul	Hauser & Sons Malting Co.
MO.—Kansas City	Meyer-Blanke Co.
WISC.—Milwaukee	Reichel-Korfmann Co.
NEBR.—Omaha	Kennedy & Parsons Co.
TENN.—Chattanooga	Southern Products Co., Inc.
Nashville	John Bouchard & Sons Co.
LA.—New Orleans	Whitman-Holloway-Olivier
TEXAS—El Paso	H. J. Baron Co.
San Antonio	Westbrook Carb. Elec. Co.
COLO.—Denver	Chemical Sales Co.
IDAHO—Boise	Van Waters & Rogers, Inc.
UTAH—Salt Lake City	Louis A. Roser Co.
WASH.—Seattle	Van Waters & Rogers, Inc.
Spokane	Van Waters & Rogers, Inc.
ORE.—Portland	Van Waters & Rogers, Inc.

Plus warehouse stocks across the country

Wherever you're located, you can easily get prompt delivery of "National" Cylinder Anhydrous Ammonia, the ammonia that's always pure—uniform—dependable—dry. Check the list of distributors at left. Warehouse stocks of Du Pont "National" Ammonia are situated right across the country, to further insure fast delivery.

As for purity . . ."National" is 99.99% minimum anhydrous ammonia. Use it to keep your refrigeration equipment operating at high efficiency.

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Wilmington 98, Delaware. BRANCH OFFICES: 350 Fifth Avenue, New York 1, New York; 7 South Dearborn Street, Chicago 3, Illinois; 818 Olive Street, St. Louis 1, Missouri.

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Standard of the Refrigeration Industry for 70 years

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BETTER THINGS FOR BETTER LIVING

. . . THROUGH CHEMISTRY

Polychemicals DEPARTMENT

E. I. DU PONT DE NEMOURS & CO. (INC.)

WILMINGTON, DELAWARE

FrozenFoods
*Reg. U. S. Pat. Off.
PREPARATION PACKAGING FREEZING STORAGE DISTRIBUTION DESIGN CONSTRUCTION EQUIPMENT

NEW PEAK FOR FROZEN FOODS

Statistics released by National Association of Frozen Food Packers show new high volume for 1949. Frozen orange concentrate nearly five times previous year's production.

AGGREGATE U. S. production of frozen fruits, berries, juices and vegetables reached a new peak in 1949, according to statistics released by the National Association of Frozen Food Packers. The combined fruit and vegetable pack last year was nearly 918 million pounds—12 percent greater than the 816 million pounds packed in 1948. The 1949 pack of these products was the second largest on record, exceeded only by the 1946 pack of 969 million pounds. If frozen concentrated juices are added in, the 1949 pack set a new record, with plenty to spare. The pack of frozen orange concentrate alone was 12,196,035 gallons last year nearly five times as great as the approximate 2½ million gallons produced during 1947-48.

The Association soon will publish detailed statistics on 1949 production, showing regional and container-size totals, but meantime is releasing summary information concerning last year's pack.

Fruit Pack Drops Five Percent in 1949

The 1949 fruit pack was 354 million pounds, down five percent from 1948. The pack of strawberries declined sharply and r.s.p. cherry production was off moderately from 1948—and these important reductions were not entirely offset by significant pack increases reported for many other products.

Some change in the regional pattern of production was indicated in 1949. In the West and in the Northeast, the packs represented a slightly larger percentage of the total in 1949 than in 1948; in the South and in the Midwest, the opposite was true.

Container-size usage showed slight change last year. While retail sizes represented about 20 percent of the total fruit pack both in 1948 and 1949, the pack in 30 pound sizes increased and the pack in barrels declined.

PRODUCTION OF FROZEN VEGETABLES, 1947-1949

Product	1947 Pounds	1948 Pounds	1949 Pounds
Asparagus	10,737,171	18,321,209	18,422,240
Beans, Green and Wax	30,910,825	49,583,305	58,523,477
Beans, Lima	68,194,194	75,403,478	87,949,043
Broccoli	9,117,383	29,126,046	45,233,194
Brussels Sprouts	4,556,871	10,525,837	23,454,790
Carrots	2,904,551	15,392,980	12,750,595
Cauliflower	5,353,479	13,962,515	21,655,312
Corn—cut	26,559,146	20,919,820	37,076,067
Corn-on-Cob	6,064,362	10,323,649	17,563,225
Peas	131,785,783	118,976,557	113,273,030
Peas and Carrots	5,301,871	6,509,812	8,096,642
Pumpkin and Squash	5,189,688	5,577,184	8,336,914
Rhubarb	1,537,566	2,629,021	4,212,197
Spinach	23,279,294	41,571,318	62,306,960
Succotash	3,762,669	6,879,195	8,290,408
Miscellaneous Vegetables	10,953,244	20,655,607	36,354,903
Total	346,208,097	446,357,533	563,498,997

PRODUCTION OF FROZEN FRUITS, 1947-1949

Product	1947 Pounds	1948 Pounds	1949 Pounds
Fruit:			
Apples and Applesause	28,572,797	27,551,778	52,268,300
Apricots	6,006,617	2,476,949	2,086,480
Cherries, Red Tart	67,001,731	87,797,699	70,988,702
Cherries, Sweet	357,441	664,163	2,965,067
Grapes and Pulp	20,974,821	5,510,983	3,118,863
Peaches	27,034,119	13,598,338	23,234,608
Prunes	2,842,548	2,125,326	5,296,709
Berries:			
Blackberries	14,509,543	9,745,426	15,186,080
Blueberries	5,406,636	7,660,830	14,035,654
Boysenberries	12,495,410	8,832,472	14,089,130
Currants	4,089,237	3,879,824	2,541,235
Gooseberries	93,040	44,000	44,152
Loganberries	2,299,021	4,174,095	3,386,009
Raspberries, Black	7,115,935	4,518,975	6,154,597
Raspberries, Red	25,401,301	23,197,984	25,682,121
Strawberries	109,035,621	160,077,403	107,599,757
Youngberries	1,160,999	662,761	626,159
Miscellaneous Fruits and Berries	9,123,056	7,203,635	4,717,039
Total	343,519,846	369,722,641	354,020,662

Note: Summarized pack totals do not include frozen single-strength citrus juices and puree nor frozen concentrated orange juice.

PLAN NOW

TO CUT POWER COST
AND BOOST TONNAGE WITH

Vogt BRINE COOLERS

WRITE FOR COMPLETE DETAILS
ASK FOR BULLETIN BC2

DOWN GOES POWER COST AND UP GOES TONNAGE when old evaporators are replaced with modern, Vogt Brine Coolers. The reason . . . maximum evaporating surface packed into a minimum of space with correct design and sound construction the controlling factors.

Vertical Multipass type coolers can be furnished for use where floor space is limited and ample head room is available.

MULTIPASS TYPE

The cooler for closed brine systems in cold storage plants, dairies, packing plants, oil refineries, etc., requiring units of large capacity.

LOWER YOUR POWER COST

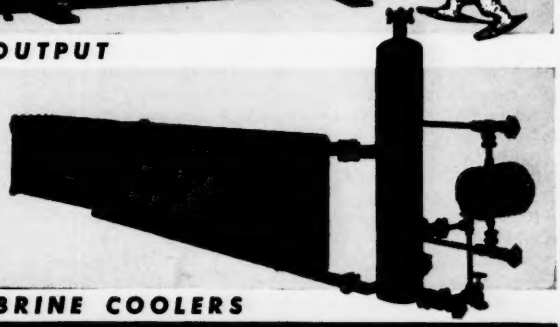
SINGLEPASS TYPE

Standard for ice freezing tanks and ideal where multiple can lifts are used. Large gas liberation area and rapid circulation of brine makes this a very efficient unit.

RAISE TONNAGE OUTPUT

COIL TYPE

Recommended for ice freezing tanks and other refrigerating purposes where space is limited. The gas is quickly liberated and a high rate of heat transfer is effected.



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Branch Offices: New York · Chicago · Cleveland · Philadelphia · Dallas

Vegetable Pack Increases

The 1949 vegetable pack set a new record high—563½ million pounds—26 percent greater than the 1948 total. Although the pack of peas dropped slightly, practically all other items showed significant increases over 1948. The pack increases reported for broccoli, Brussels sprouts, cauliflower, and spinach were especially great.

On the whole, container-size usage did not change significantly in 1949. Retail sizes accounted for about 64 percent of the total and small institutional sizes represented about 19 percent of the pack—approximately the same as in 1948.

The pattern of regional production shifted slightly last year. The percentage of the total vegetable pack put up in the West advanced from about 54 percent in 1948 to about 58 percent last year, while both in the East and South and in the Midwest, the packs represented about 2 percent less of national production than the year before.

Inspection Service for Frozen Shrimp

IN RESPONSE to requests from a number of packers, regulations extending the seafood inspection service at present operative with respect to canned shrimp and canned oysters, to frozen shrimp, have been drafted by the Federal Food and Drug Administration.

These proposed regulations provide for the inspection and certification of canned, frozen and iced shrimp. A 12-month inspection period would be established, to begin July 1 and to end on June 30 of the following year. During such period the inspection service would apply to all shrimp handled and packed. Labels on shrimp packed and certified under the proposed regulations may bear inspection legends. Although the total annual cost of the service remains unchanged, fees are to be payable in twelve monthly installments of $400. Applications for shrimp inspection are to be submitted (after 1950) by May 1 preceding the inspection period accompanied by a $400 deposit. This will constitute the first of the twelve monthly payments.

Interested parties are invited to submit comments and suggestions on the proposed regulations in writing to the Food and Drug Administration, Federal Security Building, Independence Avenue and 4th Street, Southwest, Washington 25, D. C.

North Atlantic Chapter Holds Spring Meeting

THE North Atlantic Chapter of the National Association of Refrigerated Warehouses held their spring meeting in Providence, R. I., April 24 and 25, 1950. This group, one of the largest and most active within the National Association, is composed of members from Maine to Virginia.

The business meeting was held Monday evening, April 24, and presided over by Jerry P. Johnson, chairman assisted by Bartlett C. Eddy, vice-chairman, who also was Program Chairman for this meeting.

The meeting on April 25 was held at the beautiful Squantum Club overlooking the Narragansett Bay. At this session, Dr. H. C. Diehl, director of the Refrigeration Research Foundation, discussed the importance of research and gave examples of the many projects initiated by the Foundation and their benefits to the warehousing industry. Henri Prunaret, Chief Engineer of H. N. Hartwell, Inc., gave an interesting and educational presentation entitled "Fuel Horizons". William Dalton, executive secretary of the National Association of Refrigerated Warehouses, spoke briefly concerning the industry program from a national viewpoint.

Garth Shoemaker, Rochester, N. Y., acted as moderator of the frozen food panel composed of R. R. Fanning, branch manager of the Q. F. Wholesalers, Inc., Watertown, and Davenport Scott, Minute Maid manager of the Providence District. They participated in a lively discussion on the subject entitled "Marketing Problems in the Frozen Food Industry".

After the meeting, the day was climaxed with a famous Rhode Island clam bake which was thoroughly enjoyed by all those present.

Baltimore-Washington A.S.R.E.

THE regular meeting of the Baltimore-Washington Section of the American Society of Refrigerating Engineers was held at the Fountain Head Country Club, Hagerstown, Md., Thursday evening, April 6. Douglas K. Mims, vice-president of the Jamison Cold Storage Door Co. of Hagerstown, was one of the principal speakers.

Mr. Mims spoke on trends in the cold storage door field and technical aspects of insulated doors. He said the Jamison factory turns out between 1500 and 2000 of the doors each month. The factory employs about 150 people.

Chicago Section A.S.R.E.

MEMBERS of the Chicago Section, American Society of Refrigerating Engineers held their regular monthly meeting Thursday evening, April 13 at the Builders' Club. J. G. Macormack, vice-president of J. T. Hogan & Co., Inc., gave an interesting talk on reflective insulation, embracing the development and application of this product, especially as applied to cold storage room construction.

A number of slides illustrated the engineering factors involved in the use of "Alumi-Seal" and also showed photographs of installation crews at work on various projects throughout the country. Among the graphs shown were those explaining the breakdown of total heat transfer into its component parts of radiation, convection and conduction. Radiation accounts for about two-thirds of the total transfer at normal temperatures. Aluminum sheets reflect 97 percent of this quantity when used at a maximum temperature difference of 15 F. Transmission by convection can likewise be practically eliminated if the still-air spaces are kept in the range of ½ to ¾ in.

These two factors have led to the now standard practice of applying multiple layers of sheet aluminum separated by ¾ in. furring strips in vertical wall construction. Since horizontal surfaces are subject to a different set of variables, they have been standardized with 1⅝ in. furring strips.

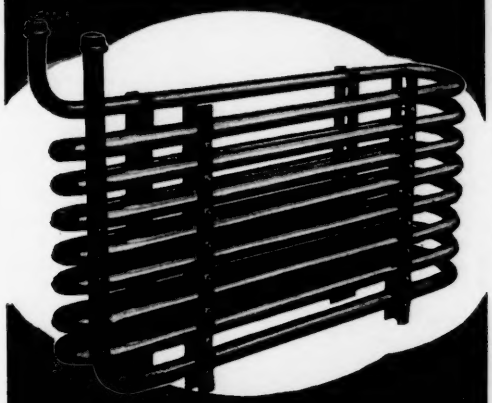
Mr. Macormack answered the shower of questions following his talk to the satisfaction of all. He cited tests which prove that years of weathering and dust collection of the aluminum sheets impair their reflective quality hardly at all. He also pointed out that this type of insulation was best in comparative economics on the medium and larger sized jobs.

Pacific Northwest, A.S.R.E.

AT A MEETING of the Pacific Northwest Section of the American Society of Refrigerating Engineers held Thursday evening, May 4, William C. Stone, Seattle, was installed as chairman. Other new officers are first vice-chairman, V. E. Kaufman; second vice-chairman, Bert N. Robinson; secretary, Fred C. Cornford; treasurer, R. Wayne Mason, all from Seattle. Howard H. Peterson, Yakima, was reelected the section's national director.

Coils

Smooth Bends
Perfect Welds
Exact Measurements



For over sixty years, the National Pipe Bending Coils have proved their quality in Ice and Refrigeration plants

The Refrigeration
BRINE MEDIUM
that gives you
5 ADVANTAGES

SOLVAY
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1. Provides a "long-life" brine . . . lowest cost in long run.
2. Allows safe operation at low temperatures . . . permits quicker freezing.
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5. Reduces possibility of costly shut-downs and repairs.

Available for immediate shipment from more than 200 local stock points.

Free literature on brine maintenance available on request.

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ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

New Incorporations

Osceola, Ark.—Articles of Incorporation for the Osceola Ice and Storage Co. were filed recently with the Secretary of State at Little Rock. Listed as incorporators are Wirt Steed, Dave S. Laney and T. A. Steed.

Morgan City, La.—The Morgan City Freezer and Cold Storage, Inc., refrigeration plants, have filed articles of incorporation with the Secretary of State at Baton Rouge. Capital stock has been listed at $100,000.

Bronx, N. Y.—Articles of incorporation have been filed with the Secretary of State, Albany, for Charles M. Silverman & Co. Inc., operator of refrigerating plants and cold storage warehouses. Capital stock was listed at 100 shares no par value. Directors are Edward J. Mallin, Sylvia Sherman and Marion E. Young.

Watertown, N. Y.—M. & M. Frozen Foods, Inc., have filed articles of incorporation with the Secretary of State, Albany. Capital stock has been listed at $30,000. Directors: Daniel G. McNulty, Robert G. McHugh and Reta A. McHugh all of this city.

Fires and Accidents

Boston, Mass.—The Metropolitan Ice Company sheds at 7-11 Callender St., Dorchester, were razed by a fire whipped by wind gusts up to 54 miles an hour which threatened to spread over a thickly-populated district near Codman Sq. Two firemen were overcome by smoke and six trucks were destroyed.

Swedesboro, N. J.—A $100,000 fire early May 6 destroyed the manufacturing facilities and plant of the Atlantic Ice Manufacturing Co. here. The building was of brick construction and was located on Second St. near the railroad tracks. It was 200 by 100 feet in size.

Carmel, N. Y.—Fire of undetermined origin destroyed a building on the Frank Dunham place near Lake Gilead. The building was used as an ice house years ago, but in recent years has been used to store materials.

Pittsburgh, Pa.—An unused filter and spray tower of City Products Corp., 5550 Claybourne St., East End, was destroyed by fire recently. Company officials said the ice-making apparatus had not been in use for several years, but part of the building is used for storage purposes.

Icy Item

Boonville, Ind.—Final adjustments of unpaid claims in the receivership of the Boonville Ice and Storage Co. were made recently in the Warrick Circuit Court before Special Judge John A. Posey of Rockport. Edward A. Von Arb, receiver, was instructed to make distribution of funds on hand. A majority of claimants will receive 100 per cent of their claims, said Mr. Von Arb.

Sales and Reorganizations

Tulelake, Calif.—The Calore Packing Co. seeks authority to sell Calore Packing Co. Inc., a cold storage warehouse here, and later to sell same to Cascade Cold Storage Co.

DuQuoin, Ill.—The Illinois Power Co. recently announced the closing of its ice plant here, and the sale of its local ice sales and delivery business to Steve Riggio and Sons of 333 North Hickory Street. Riggio will maintain a storage supply in a building at 319 North Hickory St. He said he purchased ice sizing and crushing equipment from the power company for installation in his new storage building.

Brazil, Ind.—Peter Eckrich & Son, Fort Wayne packers, have purchased two acres of ground for establishment of a meat distribution center. The company, it is reported, will erect a sizable building of the quonset type, equipped with cold storage.

Paris, Ky.—H. A. Swims has purchased the wooden structure of the ice plant on Maysville St. from the Southern Ice Company. The old wooden structure is to be torn down.

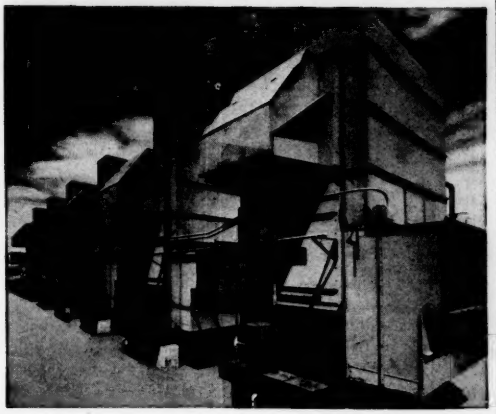
Euphrata, Wash.—Clyde V. Records, Soap Lake, has purchased the Euphrata Cold Storage and Locker plant from Albert Drittenbas. The plant is now leased to the Morning Sun dairy and the Peirone Produce Co.

Children Die in Discarded Refrigerator

IN COMING months a number of small children will lose their lives by crawling into discarded refrigerators and having the door slammed or blown shut on them. Every discarded or unused refrigerator is a potential death trap unless one of two methods are followed to make it safe.

Before a refrigerator is discarded or abandoned the latches on all the doors should be removed or broken off. This is the only safe procedure. It requires only a moment to accomplish.

Franklin Sherer, 5, and his sister Sandra, 3, of St. Paul, Minn., were playing. The abandoned refrigerator was a good place to hide, but after the doors were slammed shut behind them their cries could not be heard and they could not get out. Their disappearance was reported to police and after a city-wide search they were found in the old refrigerator in a neighbor's garage—smothered. Police and neighbors work grimly in this photo to revive the two children but in vain. (By permission International News Service).



Cut Costs TWO WAYS

By Modernizing Your Refrigeration With This New Condenser System

● Power savings and water savings combine to make money for you when you replace an old fashioned refrigerant condensing method with a modern Niagara AEROPASS Condenser. Either saving quickly returns the cost of the installation; both together make an important reduction in your operating costs for refrigeration.

In this new method the refrigerant gas passes through two cooling coils. The first coil, air-cooled, removes the superheat and condenses oil vapor from the refrigerant; the second condenses the refrigerant by the evaporation of a water spray from its surface. The heat is transferred to the air; less than 10% of the water used in conventional condensers is consumed and you save the cost of the water and the cost of its piping, pumping and disposal.

In addition the Niagara Aeropass Condenser controls the head pressure of your compressors at the lowest point for good operation, reducing your power bills. It does this automatically the year 'round, giving full capacity for peak summer loads and providing the greatest power saving in cold weather.

Hundreds of experiences in all industries that use refrigeration demonstrate these benefits and prove that they give a lasting improvement in refrigeration plant operation.

Write for Niagara Bulletin No. 103 for further information

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Slash Distribution Costs ..Step Up Sales Volume

ICE CUBES *Automatically*

WITH

STURDY-BUILT REFRIGERATED ICE VENDING STATIONS

More and more ice merchandisers throughout the nation are using automatic ice vending stations to turn "off season" slumps into higher profit periods.

By trimming costly off season truck deliveries to a minimum Sturdy-Built Stations carry the winter load and they do it more economically. Sturdy-Built Stations serve the occasional ice users who account for 27% of all station sales; a market which hitherto has been untapped by the ice industry.

Progressive ice men are out to capture this extra 27% as well as the *"after hour"* customers. 45% of Sturdy-Built sales are made between 4:00 P.M. and 8:00 P.M.

It's been tried and has been proved — Sturdy-Built sells more ice to more people — more economically — which means greater profits to you, for years to come.

Phone, Wire or Write for Detailed Information.

IN THE EAST

REFRIGERATED STURDY-BUILT ICE VENDING STATIONS

F. B. DICKINSON CO.

IN THE WEST

S&S ICE VENDING MACHINES

S&S VENDING MACHINE CO.

COMING CONVENTIONS

NATIONAL ASSOCIATION OF ICE INDUSTRIES
October 31—November 3, 1950
Sherman Hotel, Chicago, Ill.
MOUNT TAYLOR, Executive secretary

NATIONAL ASSOCIATION PRACTICAL REFRIGERATING ENGINEERS
November 28—December 1, 1950
Hollywood-Roosevelt Hotel, Los Angeles, Calif.
EMERSON BRANDT, Secretary

SOUTH CAROLINA ICE MANUFACTURERS ASSOCIATION
December 11-12, 1950
Columbia, S. C.
GEORGE L. ENGLISH, Secretary

Proper Prepackaging Calls For Adequate Refrigeration

ALTHOUGH prepackaging of fruits and vegetables at the farm shipping point offers obvious advantages in the reduction of shiping costs and utilization of wastes on the farm, there are many problems to be solved before prepackaging can be widely recommended. Reviewing some of these problems, Harold A. Schomer, plant scientist of the U. S. Department of Agriculture, points out that:

Although proper packaging and refrigeration often help maintain quality of fruits and vegetables the package itself offers no means of improving the quality of its contents. In vegetables and most fruits, quality declines continuously after harvest. The best handling methods only slow down the rate of decline.

Studies made the past two years under the Research and Marketing Act and in cooperation with the Dickman Farms, Ruskin, Fla., highlight the importance of adequate refrigeration at every step along the way from the time the produce is harvested until it is sold to the consumer.

For example, packaged broccoli remained a good green color for 15 to 20 days when held at 40 F. or below but turned yellow in 2 or 3 days at 70 F. Sweet corn lost sugar content at the rates of 3.5 percent at 32 F., 20.8 percent at 50 F. and 59.4 at 86 F. during the first 24 hours after picking. Loads of prepackaged sweet corn delivered in New York at temperatures in the 40's were graded as good to very good in quality but those delivered at temperatures above 50 F. were inferior to that held at 40 F. or lower.

In tests so far, chemical treatments of various types appear to offer very little benefit. Dips in ascorbic, citric, or hydrochloric acid did not prevent discoloration in corn and cauliflower. Instead these solutions accumulated great numbers of microorganisms, which increased loss from rots and decay.

In general, the results show, all packages should be perforated to allow for air exchange. Normal leaks through seams or poor seals will not provide enough ventilation to prevent souring. In turn, off flavors and off odors soon develop when the packaged vegetables are held at high temperatures.

Even with care, some products can be packaged more successfully near the terminal than at the distant farm market. For example, tomatoes need to be ripened to a marketable stage before they are packed. Otherwise they ripen unevenly and make an unattractive package. Also they may develop considerable decay in the two or three days required to put them into retail channels.

For continuous growth of the prepackaging industry, Mr. Schomer points out, marketing facilities must keep pace. At present the majority of wholesalers and retail stores do not have refrigeration facilities to adequately handle the most perishable lines of prepackaged produce.

ASSOCIATION DIRECTORY

AMERICAN INSTITUTE OF REFRIGERATION
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NATIONAL ASSOCIATION OF ICE INDUSTRIES
Mount Taylor, Secretary, 1706 L St., N. W., Washington 6, D. C.

NATIONAL ASSOCIATION OF REFRIGERATED WAREHOUSES
Wm. Dalton, Exec. Vice-Pres., Tower Bldg., Washington 5, D. C.

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EASTERN STATES ICE ASSOCIATION
Samuel Freer, Secy.-Treas., 12 So. 12th St., Philadelphia, Pa.

FLORIDA ICE ASSOCIATION
Muriel Washburn, Secretary, 1931 Silver St., Jacksonville, Fla.

ILLINOIS ASSOCIATION OF ICE INDUSTRIES
W. D. Wright, Secretary, Clinton Pure Ice Co., Clinton, Ill.

INDIANA ASSOCIATION OF ICE INDUSTRIES
Robert W. Walton, Secretary, Board of Trade Bldg., Indianapolis, Ind.

KANSAS ASSOCIATION OF ICE INDUSTRIES
C. A. Berkihiser, Manhattan Ice & Cold Stg. Co., Manhattan, Kans.

KENTUCKY ICE MANUFACTURERS' ASSOCIATION
R. T. King, Secretary, 429 S. Seventh St., Louisville, Ky.

MICHIGAN ICE INDUSTRIES ASSOCIATION
Edward W. Jackson, Secretary, 131 E. Kalamazoo Ave., Kalamazoo, Mich.

MISSOURI ICE MANUFACTURERS' ASSOCIATION
A. V. Espborst, Secretary, 3820 Washington St., St. Louis, Mo.

MOUNTAIN STATES ASSOCIATION OF ICE INDUSTRIES
J. R. Espy, Secretary, Espy Ice Co., 2229 - 15th St., Denver, Colo.

NEBRASKA ASSOCIATION OF ICE INDUSTRIES
Frank Vogelsang, Secretary, W. T. Good Ice Co., Lincoln, Nebr.

NEW ENGLAND ICE ASSOCIATION
Raymond Wilber, Secretary, 419 Boyleston St., Boston, Mass.

NEW YORK STATE ASSOCIATION OF REFRIGERATED WAREHOUSES
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NORTH CAROLINA ICE ASSOCIATION
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NORTHWEST ASSOCIATION OF ICE INDUSTRIES
Ed. H. Shea, Secretary, 2027 N.E. Schuyler, Portland, Oreg.

OHIO ASSOCIATION OF ICE INDUSTRIES
Guy W. Jacobs, Secretary, The Steubenville Ice Co., Steubenville, Ohio

OKLAHOMA ASSOCIATION OF ICE INDUSTRIES
242 Key Bldg., Oklahoma City, Okla.

PACIFIC STATES COLD STORAGE WAREHOUSEMEN'S ASSOCIATION
Jack L. Dawson, Secretary, 461 Market St., San Francisco, Calif.

SOUTH CAROLINA ICE MANUFACTURERS' ASSOCIATION
Geo. L. English, Secretary, P. O. Box 603, Columbia, S. C.

SOUTHERN ICE EXCHANGE
Richard W. Florrid, Secretary, 111½ Forsyth St. N.W., Atlanta, Ga.

SOUTHWESTERN ICE MANUFACTURERS' ASSO.
P. A. Weatherred, Secy. Counsel, Mercantile Bank Bldg., Dallas, Texas

TENNESSEE ICE MANUFACTURERS' ASSOCIATION
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TRI-STATE ASSOCIATION OF ICE INDUSTRIES
L. R. Girton, Secretary, 260 Boyce-Greeley Bldg., Sioux Falls, S. D.

VIRGINIA ICE MANUFACTURERS' ASSOCIATION
H. H. Snyder, Secretary, Alexandria, Va.

WEST VIRGINIA ASSOCIATION OF ICE INDUSTRIES
E. Dana Smith, Secy., Diamond Ice & Coal Co., Charleston, W. Va.

WISCONSIN ASSOCIATION OF ICE INDUSTRIES
Paul F. Hoff, Secretary, 1300 East Locust St., Milwaukee, Wis.

Wholesale Grocery Installs Cold Storage

A COLD storage department will occupy the basement of a $600,000 office and warehouse to be constructed this summer by United Retail Merchants at Ruby and Jacksons Sts., Spokane, Wash. According to announcement by F. F. Vawter, general manager, it will be the largest wholesale grocery plant in the Pacific Northwest.

The new building will contain more than 140,000 square feet of floor space on three levels, will be a block and one-half long, and more than a block wide. Reinforced concrete construction will be used throughout. The main warehouse will be on the ground floor, and will cover more than 100,000 square meet. Covered loading docks will extend to a railroad spur.

Short Cut to Controlled Profits—

HERE'S HOWE!

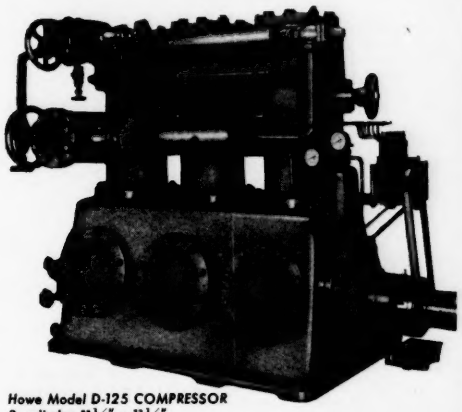
Control constantly, the exact humidity and temperature necessary to keep your products at perfection, and you've taken the short cut toward controlling profits.

From plants of all kinds, all over the world, come letters which report the efficiency-increasing, trouble-free operation of Howe Refrigeration Equipment. Designed out of 38 years of accumulated, field-proved knowledge, Howe equipment is ruggedly built, yet flexible to handle peak loads economically. Can be installed without expensive building alterations. Its low maintenance costs are proved . . . *controlled!*

Your surest, quickest, lowest-cost way to control your net profit is to install Howe Refrigeration Equipment, whether you need one compressor or a coordinated plant design.

For all your refrigeration problems consult Howe, since 1912 manufacturers of ammonia compressors, condensers, coolers, fin coils, locker freezing units, air conditioning (cooling) equipment. Write for descriptive literature.

A few distributorships are available
Your inquiry invited



Howe Model D-125 COMPRESSOR
3 cylinder 11½" x 11½"
50% Capacity Reduction Control
Standard Rating 125 Tons

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ICE MACHINE CO.
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AND OTHER SURFACES !

KEEP THEM CLEANER . . .

They'll Even Last Longer When Properly Painted!

CSCO
GREY PAINT
Is Made Especially For Ice Plant Service

GUARANTEED AS GOOD
OR BETTER THAN ANY OTHER PAINT OR COATING ON THE MARKET OR YOUR MONEY REFUNDED

CSCO Can, Coil and Condenser Coating is a Black Phenolithic Compound . . .

Excellent for coating ice cans above or below brine levels. Also condensers and all other surfaces immersed in either brine or water or exposed to the atmosphere.

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NEW PLANTS AND IMPROVEMENTS

This Department each month presents the more important developments covering new construction, as well as additions, improvements, remodeling, and installations of new equipment in ice and cold storage plants and other industrial plants that use refrigeration. News notes on all such developments are invited.

ALASKA

Adak, Alaska—The United States Navy recently installed two Worthington 4HF6-Freon-12 condensing units, two Worthington 3HF6-Freon-12 condensing units and two Worthington FK-3050 Oil Separators in the cold storage plant here. In addition, one 3HF6 condensing unit has been installed to air condition the receiving building.

CANADA

Cornwall, Ont., Canada—Stormont Cold Storage Co-operative plans to build a $100,000 freezing, locker and bulk storage plant on completion of financing. The plant will be one story, 9,500 square feet, concrete, cork and brick, with store in front and two ammonia refrigeration units. This co-operative like others of its kind, is said to be in line for an Ontario Provincial Government grant of 50 percent of the capital cost, plus Federal grant of 20 percent.

Hamilton, Ont.—The Peller Brewery Co. is planning the erection of a $100,000 ice plant to the east of the present brewery property, to start immediately. The new plant will produce 50 tons of ice daily.

CALIFORNIA

Delano, Calif.—A. J. Prine Ice Service Co. last month installed additional S & S equipment, A Model 20C vending station equipped to dispense block ice and 25 lb. bags of processed ice will now serve the community as well as summer highway pleasure seekers.

Oakland, Calif.—Contracts for the construction of Holly Meat Packing Co.'s new $300,000 plant here were awarded recently, it was announced by Charles Figone, president. With completion and equipment of this new building, Holly's investment at the East Bay site will be brought to approximately $750,000 and will add thirty workers to the firm's payroll. Among the new plant's facilities will be the latest air type refrigeration equipment. It will maintain a 35 degree below zero temperature in the plant's 800-ton capacity deep freeze section.

Reedley, Calif.—The new 30-car plant of the Nash-DeCamp Co. will be put into service early in June. It is expected to have the storage plant ready for operation by the time the plum season starts. After plums, the plant will be used for peaches, then finish the fall with Emperor grapes. There will be three storage rooms, each with a capacity of 10 carloads.

Sebastapol, Calif.—Contracts were awarded recently by the Sebastopol Apple Growers Union for the construction at Molino of a cold storage plant with a capacity of approximately 200,000 boxes. The building, which will be of reinforced concrete construction, will be erected by Shatto & Lunceford, local contractors. The York Corp. was awarded the refrigeration machinery. All contracts provide that the plant shall be in operation for the coming apple season. The entire capital investment covering the cost of the cold storage plant and equipment has reached its goal of $200,000.

FLORIDA

Miami, Fla.—Additional Sturdy-Built ice vending stations are being set up in this city by City Products Corp. Equipped with S & S ice venders, the latest unit, Model 20B dispenses 25 lb. blocks and packages of prepared ice in paper bags.

Miami, Fla.—Plantation Foods, Inc., has converted a huge quick-freeze plant built and equipped by Miami Pineapple Plantations at 500 NE Miami Gardens, Uleta, into a new ice cream plant, backed by Arthur V. Davis, chairman of the board of Aluminum Corp. of America. The plant quick-freezes ice cream and packages it in a new insulated wrapper for which it holds the patent. The company also holds the Florida franchise for "diced cream" a copyrighted merchandising idea.

St. Augustine, Fla.—S & S ice vending equipment now handles the platform trade at the Riberia Street plant of City Products Corp.

GEORGIA

Atlanta, Ga.—The Georgia Institute of Technology recently installed Worthington air conditioning for the new W. Harrison Hightower Textile Engineering Building. This $2,000,000 building houses laboratories, class rooms, offices, auditorium and library for Georgia Tech's new textile school. One Worthington 150 ton centrifugal refrigeration system is the equipment installed.

IDAHO

Sugar City, Idaho — The Valley Packing Company opened its doors to the public recently. In addition to handling beef, pork, sheep, veal and chickens, the company manufactures ice for sale to the public and uses part of what they make in chilling the dressed chickens.

INDIANA

Indianapolis, Ind.—Irvington Ice & Coal Co. has established another S & S equipped ice vending station, Model 20-B, equipped to dispense both block and prepared packages of ice. F. B. Dickinson of Des Moines, Iowa, supplied the equipment.

Lafayette, Ind.—Continental Freezers, Inc., owned by the Lafayette Foods Corp. was recently completed at a cost of $750,000. Announcement of its erection was made in the August, 1949 issue of ICE AND REFRIGERATION. Two large freezer rooms will hold 10 million pounds of merchandise at one time. The building is 476 feet long, 116 feet wide, and is 20 feet high on the inside. The building is heated by radiant electric heat, and four large compressors provide a 10 degrees temperature in the freezing rooms.

IOWA

Oelwein, Iowa—Young Coal Co. has completed installation of another S & S equipped Sturdy Built ice vending station, Model 20-B, equipped to dispense block ice as well as prepared ice in paper bags.

LOUISIANA

Natchitoches, La.—The City Ice Co., located on Amulet St., recently completed a truck icing platform.

MAINE

Bangor, Me.—Additional S & S ice vending equipment has been installed by Getchell Bros. Inc. of this city, adding another 24-hour automatic ice service depot.

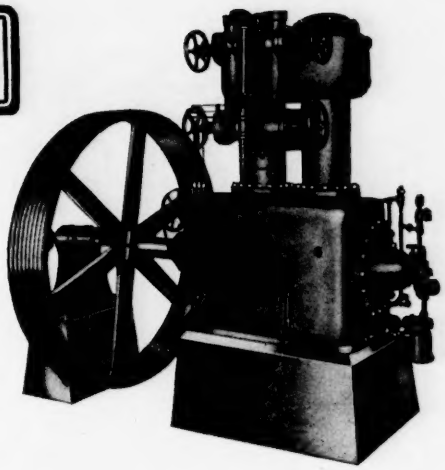
MICHIGAN

Battle Creek, Mich.—The City Ice & Beverage Co. has installed fully automatic controls on its ice manufacturing machinery and has established ice venders where continuous service is available, as part of a $15,000 renovation program.

Benton Harbor, Mich.—A new building to house Swift & Co.'s ice cream division, 734 West Main St., is now under construction. The building will be 50 feet wide and 90 feet deep. It is of cement block construction. The building will house a modern dairy bar, a branch office for Swift & Co. and a refrigeration room.

Lansing, Mich.—The Michigan Department of Health has installed air conditioning equipment for the state health laboratories consisting of 1 Worthington HF4-Freon-12 condensing unit to air condition the media glassware and supplies laboratory; 1 Worthington 3HS2 Freon-12 condensing unit handles a cold room for mold control and 2 Worthington #HF6 Freon-12 condensing units air condition the tuberculosis laboratory.

Sterling DEPENDABLE REFRIGERATION



The phrase "STERLING DEPENDABLE REFRIGERATION" is more than a slogan—it's a fact.

Built with rugged strength for endurance, with advanced design for efficiency and economy of operation, STERLING Ammonia Compressors are the product of more than fifty years of "know how" in the manufacturing of refrigeration machinery and equipment.

A complete range of sizes insures the correct compressor for each application.

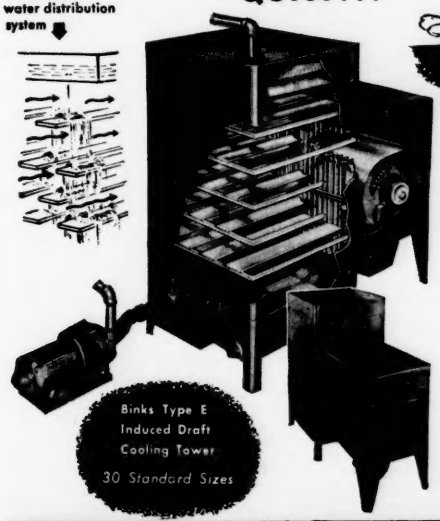
Deliveries are, at present, current—most models of compressors are available from stock.

For complete information, see your nearest STERLING distributor, or write the factory.

REYNOLDS MANUFACTURING CO.

SPRINGFIELD *"Builders of Fine Refrigeration Equipment"* **MISSOURI**

Diagram showing new nozzleless water distribution system



Binks Type E Induced Draft Cooling Tower
30 Standard Sizes

Quiet...

a NEW type cooling tower

for use with "packaged" water-cooled air conditioning and refrigeration systems

A new type of water distribution system eliminates the use of spray nozzles in Binks Type E blower-type cooling towers. Distinguished by extremely quiet operation and high efficiency, these towers are ideal for use with "packaged," water-cooled air conditioning and refrigeration condensing units, such as are installed in small businesses and residences. Installations may be either outdoors or indoors.

- All galvanized steel construction
- Capacities up to 36 tons
- Attractively priced
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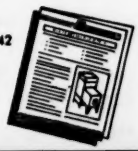
- Low operating cost

Write today for Binks Bulletin No. 42 which includes complete data on all 30 Type E cooling towers.



THERE'S A BINKS SPRAY NOZZLE FOR EVERY SPRAY JOB

Binks MANUFACTURING COMPANY

REPRESENTATIVES IN ALL PRINCIPAL CITIES ■ 3130-38 CARROLL AVENUE, CHICAGO, ILL.

Sparta, Mich.—Forrest Field & Son, are completing a refrigerated warehouse with 20,000 bu. capacity in the building of the Handy Wacks Corp.

St. Joseph, Mich.—A new expanded Pearl Grange fruit exchange will replace the exchange building that was completely destroyed by fire in April, according to Nick Argondelis, president and majority stockholder of the exchange corporation. He said that in addition to the fruit packing and processing facilities contained in the old plant, the new exchange will include cold storage rooms for fresh fruit, and deep freeze facilities for frozen fruits.

MINNESOTA

St. Paul, Minn.—Citizens Ice Co. has another No. 2012 Polar Station with three venders in operation here.

MISSISSIPPI

Jackson, Miss.—Capitol Ice here has three model 22B three-belt combination venders and two model 22B two-belt Polar venders.

NEVADA

Reno, Nev.—The Crystal Springs Ice Co. has installed two additional 24-hour S & S ice vending stations, selling both block and cubed ice.

NEBRASKA

Fremont, Nebr.—George A. Hormel Co. is erecting a new packing plant with Worthington Freon centrifugal refrigeration for all levels of loads, cooling ammonia for circulation to air units, freezers and ice-making units. The new equipment consists of 1 Worthington 67C10-8-400 ton centrifugal refrigeration system with Freon 11 as the refrigerant, condensing ammonia at 17 F; 1 Worthington 66C8-6 225 centrifugal refrigeration system with Freon 11 as the refrigerant, condensing ammonia at 5 F; 1 Worthington 54H10-6-250 ton centrifugal refrigeration system with Freon-12 as the refrigerant, cooling ammonia from minus 55 F to minus 60 F for use in a sharp freezer; 1 Worthington 800 square foot surface-type steam condenser, also miscellaneous receivers, suction traps and ammonia pumps. Buildice Co. Inc., Chicago, Ill., was the contractor.

NEW MEXICO

Carlsbad, N. Mex.—Bond Ice Co. has a model 20 Polar combination vendor for vending cake and bag ice.

NEW YORK

New York, N. Y.—American Ice Co. recently installed an additional ice vending station. The unit, a Model 16-C, S & S equipped, sells block ice and packaged ice automatically.

New York, N. Y.—The new 488 Madison Avenue Building is being completely air conditioned. The new equipment consists of 28-Worthington RCY-700 (25 hp) package air conditioners; 10 Worthington RCY-600 (20 hp) package air conditioners; 2 Worthington 6HF4 Freon-12 condensing units; 1 Worthington-Acme 18 in. x15 ft. water cooler; 1 Worthington-Acme 16 in. x 12 ft. water cooler; 5 Worthington Central Station air conditioning units, with chilled water and steam coils. The total refrigeration capacity for the building is 1050 tons.

NORTH CAROLINA

Wilson, N. C.—Coastal Dairy Products has had 3 6 x 6 VSA ammonia compressors and 1 ammonia booster installed in the ice cream hardening rooms. The ice cream mix is precooled to 40 F, frozen at about 0 F, and then hardened at minus 20 F.

OHIO

Elyria, Ohio—S & S ice vending equipment installed at City Products Corp. plant here, makes ice available 24 hours every day to residents of this city.

OKLAHOMA

Coalgate, Okla.—The Coalgate Ice Service recently put into operation its new ice docks located on South Main and will provide an automatic ice-vending machine for service at nights or during off-hours, according to Walter Graper, owner. Richard Penick will be the local manager.

OREGON

Molalla, Ore.—A newly-constructed $10,000 slaughterhouse here has been put into operation recently, Herbert E. Steiner, Oregon City, manager of the new plant, announced. The new building has a specially designed cooling system.

Portland, Ore.—The Blitz Weinhard Brewing Co's latest addition in a $2,000,000 expansion program has been completed.

PENNSYLVANIA

Donora, Pa.—City Products Corp. plant at First and Meldon Sts., now is equipped with S & S ice vending service for 24 hour ice sales. Similar installations are now complete at the Monessen and Pittsburgh plants.

Scranton, Pa.—A $50,000 meat processing freezing plant is being erected on Birney Ave. in the Oak Hill section of Moosic Borough by the Polarized Meat Co., owned and operated by Albert R. Justan, Dunmore. Half of the building, Mr. Justan said, will contain three separate freezing compartments.

TENNESSEE

Nashville, Tenn.—Atlantic Ice Co. is building ten new drive-in stations in this territory.

TEXAS

Austin, Tex.—J. C. Penny, department store, has been air conditioned by a Worthington Freon-12 condensing unit.

Dallas, Tex.—The Southland Corp. is now operating a No. 1812 Polar cabinet.

Fort Worth, Tex.—Texas Ice & Refrigeration Co. has a Junior Polar station with two venders and a model No. 2210 Polar station with three venders.

Greenville, Tex.—Burnett Crystal Ice Co. has installed Model No. 724 Polar boxes at Texarkana and at Sulphur Springs.

Hereford, Tex.—Plans for construction of a $250,000 ice plant here are announced by Rip Underwood of Amarilla and Reginald Williams of Idabell, Okla., partners in the new Hereford Ice Co. The plant is to serve the surrounding agricultural area which has long been in need of bulk ice facilities to be utilized in shipments of lettuce, carrots, cantaloupes and other vegetables.

Mission, Tex.—McAllen Ice purchased a No. 2014 Polar station with two combination venders for installation here.

Stamford, Tex.—Arledge Ice Co. is now operating five model No. 16B Polar venders.

Victoria, Tex.—Victoria Ice Co. recently installed two model No. 16 Polar venders. These are for vending either cake or bag ice.

UTAH

Richfield, Utah—The Dixon Packing Co. has just opened a new meat processing center south of the Sevier County Fair Grounds.

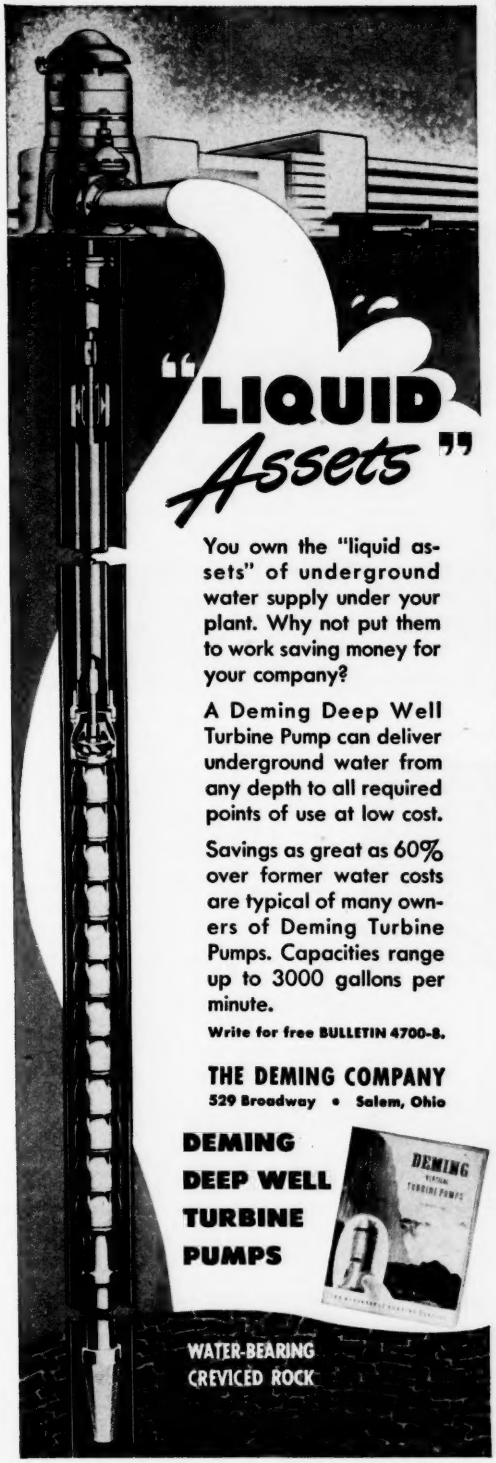
Ogden City, Utah — Construction has begun on the new $275,000 warehouse of Western Gateway Storage Co., 130 West 28th, and the company expects to be operating there by July 1. The new building will contain 60,000 sq. ft. of floor space and will include full facilities for storing output of local canning and food processing plants, cooler and freezer space and office space. The large rail loading dock will accomodate six railroad cars while the truck loading dock will handle ten trucks.

WASHINGTON

Neah Bay, Wash.—The new Neah Bay receiving and supply station of the Fishermen's Cooperative Association has been officially opened. The new fishing terminal, which cost approximately $200,000 is near the Indian village at Neah Bay. It includes a dock 585 feet long, a general store, a ship chandlery, a cold storage and ice manufacturing plant and moorings where five fishing vessels may be serviced at the same time.

Prosser, Wash. — Prosser Packers Inc. have equipped a freezing plant where plans call for a minimum pack of 4,000,000 lbs. per year for the next eight years, the term of the lease. The engine room includes Worthington compressors with synchronous motors mounted directly on the ice machine shafts. The booster compressors are of the Rotovane type directly connected to rpm motors. The plant engine room is also designed for expansion, the piping and electrical installations being sufficient to accommodate 11 machines with a capacity of freezing 100 tons per day and a storage capacity of 5,000 tons. The storage and freezing room are equipped with aluminum fin type coils and have a total of 60 hp on the fans that move the air. Auxiliary units are also provided in the storage rooms

Spokane, Wash.—The United Retail Merchants at Ruby and Jackson Sts., are planning to construct a $600,000 office and warehouse this summer, the cold storage department of which will occupy the basement.



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You own the "liquid assets" of underground water supply under your plant. Why not put them to work saving money for your company?

A Deming Deep Well Turbine Pump can deliver underground water from any depth to all required points of use at low cost.

Savings as great as 60% over former water costs are typical of many owners of Deming Turbine Pumps. Capacities range up to 3000 gallons per minute.

Write for free BULLETIN 4700-8.

THE DEMING COMPANY
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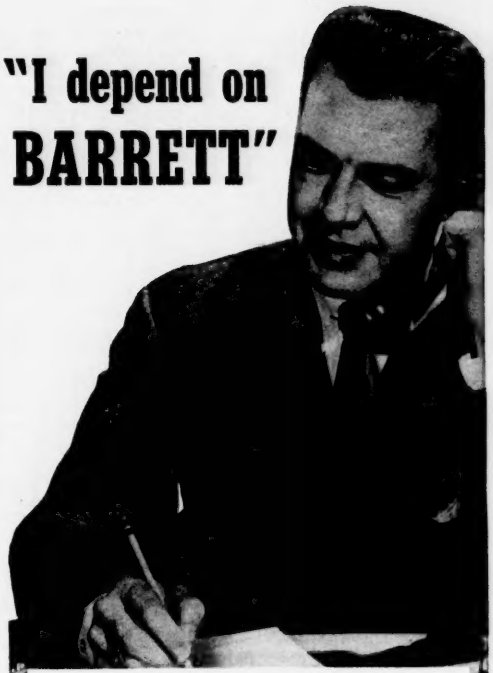
DEMING DEEP WELL TURBINE PUMPS

WATER-BEARING CREVICED ROCK

"I depend on BARRETT"



"Yes, I always buy Barrett Standard Anhydrous Ammonia. I know from long experience that the name Barrett means unexcelled purity, consistent high quality and dependable service.

"I never worry or fret after I place my order. My shipments arrive on time . . . the cylinder valves are in good working condition . . . and Barrett picks up empties promptly.

"When I need help on a technical problem, I get the expert advice of Barrett's trained technicians, without charge or obligation. Barrett is the name to remember when you need ammonia!"

Barrett STANDARD ANHYDROUS AMMONIA

Available in 150, 100 and 50-pound cylinders for speedy delivery from stock points conveniently located from coast to coast.

THE BARRETT DIVISION
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*Reg. U. S. Pat. Off.

DEATHS

Thomas M. Rector

THOMAS M. RECTOR, vice president in charge of research and development at General Foods Corp., died March 31 in Battle Creek, Mich., following a heart attack. Mr. Rector, who was in Battle Creek on business, was 56. Born February 26, 1894 in Warrenton, Va., Mr. Rector attended public schools in Washington, D. C., graduating from Western High School in 1911. He had been a General Foods vice-president since 1943 and had been associated with the company 28 years.

His first business connection was as a laboratory assistant and later junior chemist with the Institute of Industrial Research in Washington. While at the Institute, he developed Franklin Baker's Milk Packed Coconut. In 1915, he joined the Pompeian Olive Oil Co. and returned to the Institute of Industrial Research in 1919, after serving as a first lieutenant in the Chemical Warfare Service. He set up a new department called the "Division of Food Technology," serving as chief chemist. This was probably the first time that the term "Food Technology" was used. He began the development of Franklin Baker's Southern Style Coconut, and of the Vitapack process.

From 1920 to 1922, he was director of the Pease Laboratories' chemical department in New York City. In 1922, he joined the Franklin Baker Co. as chief chemist in charge of research and development. In 1927, when Franklin Baker joined General Foods, Mr. Rector was made chemical engineer of the corporation. He was named director of engineering research in 1932 and general manager of General Foods' Central Laboratories in Hoboken, N. J., when they opened in 1939. He became manager of research and development in May, 1943, and vice president in November of the same year.

He was the author of several reference books and many articles on food research and was a member of the following organizations: American Institute of Food Technologists, American Chemical Society, Franklin Institute, Industrial Advisory Committee of the Nutrition Foundation, Inc., Scientific Advisory Council of the Refrigeration Research Foundation. He was also director, associates, Food & Container Institute for the Armed Forces. He held about 30 patents in the U. S. and abroad. He was to be tendered the Nicholas Appert Award in May.

He is survived by his widow, the former Elizabeth Hall Schoenly and two married daughters.

CHARLES E. SCHLOEMER, former secretary-treasurer of the Grocers' Ice and Storage Co., Louisville, Ky., died April 13. Mr. Schloemer who was 77 years old, retired 15 years ago. He is survived by three sons, Charles E., William F., and Lewis A. Schloemer and a daughter, Mrs. Charles E. Putnam, St. Louis.

JOHN STRIFFLER, formerly associated with his brother in the ice and cold storage business in Springfield, Ill., and also former manager of an ice plant at Lincoln, died April 18. He was born in Springfield but lived for some time in Marinette, Wis.

FRANK M. KIRBY, president of Kirby Packing Co., Pontiac, Mich., died of a heart attack April 3 at Pontiac General Hospital following an illness of the past six months. He was 65 years old. He is survived by his widow, Emma E. Friday Kirby, one daughter, Mrs. Mabelle Hancock and one son, Albany C. Kirby.

RICHARD E. ROWLAND, 71-year-old former manager of the ice plant of the late Paul J. Rainey, New Albany, Miss., and later owner and operator of the plant, died April 9.

CASPAR A. TOOKE, Shreveport, business man and vice-president of the Arkansas Ice and Cold Storage Co., Shreveport, La., died May 4, 1950. He was 59 years old.

NEW AND IMPROVED EQUIPMENT

MACHINERY-APPLIANCES-PROCESSES

Information contained in this department is furnished by the manufacturer of the article described and is not to be construed as the opinion of the Editor.

Testing Diesel Cooling Water

A NEW low cost, rapid and accurate method of testing Diesel cooling water on the spot has been announced by Dearborn Chemical Company, 310 S. Michigan Avenue, Chicago. Called the Dearborn Chromokit, the small, portable kit permits convenient field testing of Diesel units by means of a spot test using chemically impregnated test cards. The color reaction which results from applying only one drop of the cooling water sample indicates treatment strength and permits accurate adjustment within a matter of minutes.

Inhibited chromate treatments in the cooling water, properly maintained at required strengths, reduce corrosion and maintenance and permit peak operating efficiency. Frequent chromate strength tests are necessary, however, since strengths vary with additions of new water supplies through overfilling and overflowing.

New Dearborn Chromokit

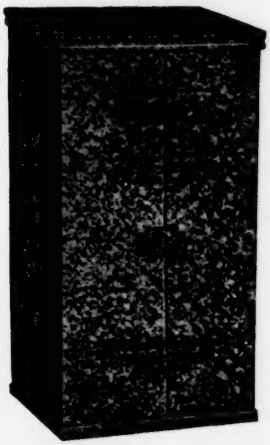
The Chromokit is a metal case containing four sample bottles, a packet of test cards to conduct 80 tests, color standard guide, and treatment adjustment chart. A sample of cooling water containing treatment is taken in the dropper bottle. One drop is placed on the test card. After two minutes the color reaction is matched against the standard color guide, indicating chromate strength present. Five color spots on the guide indicate variations from satisfactory range to inadequate strength. When chromate strength is low, the spot value is checked against the Treatment Adjustment Chart which indicates additional treatment required by cooling systems of various water capacities ranging from 50 to 300 gallons.

New Vinyl Resin Coating

A NEW vinyl resin formulation designed to meet a wide range of surfacing requirements involving moisture and chemical resistance is announced by The Dampney Co. of America, Hyde Park, Boston, Mass., manufacturer of specialty protective coatings. The material, identified as Dampney Vinyl Coating, may be modified and adapted to meet individual needs within that area of service.

Dampney Vinyl Coating is recommended for service over an operating

OHIO SPECIAL ICE CANS



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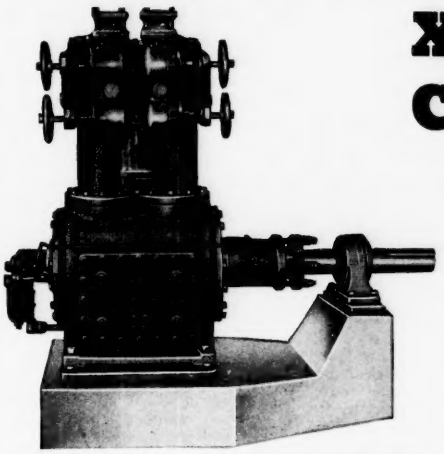

Also manufacturers of Ammonia Valves in all sizes up to 8 inches.

HAVE LONG LIFE and DEPENDABILITY

XL Ammonia compressors are equipped with roller bearings—ring plate valves —force feed lubrication for slow or high speed operation.

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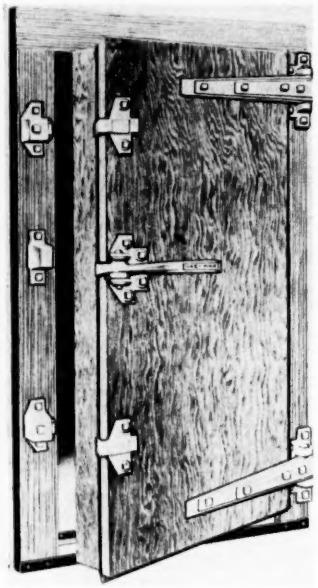
temperature range of —40 to 160 F., wet or dry. It is said to be resistant to alkalies and mineral acids, insoluble in alcohols, greases, oils, and aliphatic hydrocarbons, and to have low permeability to water vapor and low water absorption. It is particularly effective in applications where metal is subject to deterioration from chemical or moisture attack. An applied film of this material is nonflammable and imparts neither taste, odor, nor toxicity. It may therefore be used without fear of contamination on surfaces to come in contact with foods, beverages or pharmaceuticals. Application may be made either by brush or spray at coverage of 400 square feet a gallon.

Plastic Bonded Plywood For Cold Storage Doors

J. V. JAMISON III
President, Jamison Cold Storage Door Co.

DEVELOPMENTS in thermosetting plastic adhesives and marine quality plywood have made possible the production of a new kind of plywood cold storage door, which is as different from previous cooler and freezer doors using plywood as the modern automobile is from the Model T Ford.

Although plastic bonded plywood has been used by the army and navy for such heavy duty applications as ship bottoms, bottoms on landing barges, cargo carriers and storage bins, this is the first time marine quality bonded plywood has been used for cold storage door construction.



A cold storage door made of marine quality plywood, bonded with plastic resin.

Heretofore plywood for cold storage doors has been used chiefly as exterior paneling to produce an attractive, smooth appearance over a basic construction of reinforced tongue-and-groove. Problems encountered included moisture penetration at the seams and peeling of the plywood. These problems have been eliminated with the new-type plywood door, where marine quality plywood forms the basic construction of the door.

Since plywood is a built-up board of laminated veneers in which the grain of each piece is at right angles to the one adjacent to it, its construction takes advantage of the physical properties of the wood. The strength of the wood is along the grain, in the longitudinal direction. In this axis, also, there is no expansion or contraction. In wood there is no cleavage plane across the grain, and wood will not split. By placing plies at right angles to each other, the desirable physical properties of the longitudinal grain, and of the crosswise grain are obtained in both directions.

Plastic Resin Bonding Provides Strong Joints

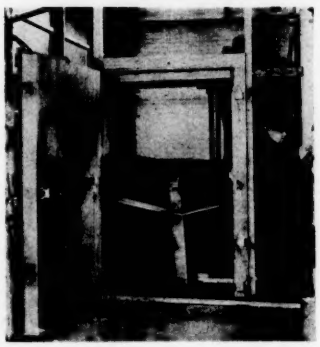
Although plywood has the physical properties to produce a strong, nonshrinking, non-splitting panel, it has been used for many years only as veneer because its natural physical properties were superior to the bonding agent. Now, with plastic resin bonding, the joints are as strong or stronger than the wood itself. The phenolic resin adhesives that are now used are pressed and completely set within a few minutes by means of large hot-plate presses. The pressure and heat changes the phenolic resin adhesive into an insoluble plastic, and welds the cross-laminated wood sheets into rigid panel units, suitable for permanent exposure to moisture or to temperature changes.

The adhesive stands up under a cold-soaking test, a boiling test, and a fire test. If delamination occurs under the rigid test conditions set up by the National Bureau of Standards, the plywood is rejected for use. To get greatest strength, the user should be sure that all plies throughout are top quality Grade A heartwood, free from defects. All plastic bonded plywood on the market for marine use—and this is the quality from which Jamison "50" Cooler and Freezer Doors of Monopanel construction are made—has passed these and other tests for quality and can be depended upon to perform satisfactorily under any temperature and moisture conditions.

Advantages Provided

When used on cold storage doors, plastic bonded marine plywood provides these advantages:

Greater rigidity and greater strength than ordinary wood, because the cross lamination distributes the strength in both directions. Consequently, freedom from warping results.



The ability of plastic bonded plywood to withstand hard usage is shown by this model being given a life test. When the picture was taken, it had been opened and banged shut 1½ million times, without showing appreciable wear.

The bonding resin is not affected by moisture or temperature.

An effective barrier when the back of the panel on the warm side is coated with asphalt. Although the bond is completely water insoluble, the wood itself must be protected by a vapor-resistant coating. According to the Douglas Fir Plywood Association, asphalt is a very effective coating. The Association reports that published data on vapor loss are not available, but experience of plywood, plastic, and pulpboard manufacturers with vapor barriers indicates that the vapor loss of these materials should not exceed from 0.60 to about 1.00 grains per sq. ft. per hr. under a pressure of 18.45 mm. of mercury. Plywood, made of ¼ in. Douglass fir, with two coats of asphalt paint, loses only 0.308 grains per sq. ft. per hr. under a mercury pressure of 18.45 mm. Asphalt has been found to cut the vapor loss 90 percent and provides the most effective barrier so far known.

Sanitation. The bonding material does not support bacteria or fungi, and the face of the door, being a continuous plywood sheet, is smooth and easy to clean.

Full Insulation. Unbroken insulation across the face of the door is

DIMCO CAST ALUMINUM FIN EVAPORATING COIL

★ *Saves Space*

★ *Saves Weight*

★ *Saves Cost*

CAN BE USED WITH ANY REFRIGERANT
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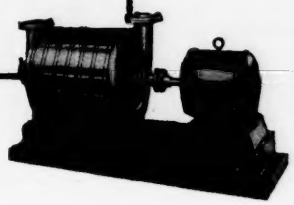
MULTI-STAGE BILLMYRE TYPE BLOWER



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Single and multi-stage
½ lb. to 7 lbs. pressure
½ hp. to 250 hp.

Since back in the '90's, these trustworthy Blowers and Exhausters have been faithfully serving American industry—for agitation and aeration—for combustion—for cooling and ventilating—for gas and acid production—for conveying—and numerous other applications having various pressure and vacuum requirements.

If you have a problem in handling air or gases of various densities, temperatures or chemical compositions, write today for latest bulletin, B-5, on Lamson Blowers and Exhausters.

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Coils are of selected ammonia pipe—all joints are electrically welded—checked under water with an air pressure of 300 pounds to guarantee tightness.

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made possible by the rigid door structure that does not require any internal bracing and permits the space to be entirely filled with insulating material.

In taking the plastic bonded plywood door out of the "custom-built" class, and in making it generally available for the first time for cooler and freezer doors, the Jamison Cold Storage Door Company has incorporated certain other special features which, it is believed, will provide added serviceability and prolong the life of the door.

STRENGTH AND RIGIDITY OF FRAME WALLS
(From U. S. Forest Products Laboratory Tests, Wall With Openings)

Sheathing Material	Relative Rigidity	Relative Strength
1 x 8" Diagonal Sheathing	1.0	1.3
29/32" Fiberboard (8d nails, spaced 3" at all vertical edges, 5½" to 6" elsewhere)	1.6	2.1
Horizontal Sheathing (1 x 8' sheathing; 1 :: 4" let in braces; 8d nails, 2 per stud crossing)	1.5	2.2
¼" Plywood Nailed (6d nails, spaced 5" at edges, 10" elsewhere)	2.0	2.8
¼" Plywood Glued to Frame	3.7	4.0

The constant use of a cold storage door has always presented certain maintenance problems, due to wearing out of the gasket, or to injury caused by sudden, sharp shocks, and trucking abuses. One of the things for which builders and architects look is the ability of a refrigeration door to stand up under constant banging. The Monopanel construction of the Jamison "50" door provides a strength and rigidity from three to four times greater than present plywood construction, and far greater than solid wood horizontal or vertical construction. The following table, based on tests from the U. S. Forest Products Laboratory, gives the rigidity and strength of various types of frame wall materials. The table shows that ¼ in. plywood sheathing provides nearly four times more rigidity and strength than ordinary diagonal sheathing.

For still greater strength, the Jamison plywood door is constructed with ⅞ in. plywood on the front, and ⅝ in. plywood on the back.

In addition to providing greater strength and rigidity, the Jamison "50" Cooler and Freezer door has two patented features, the E-Z Open (2-point) Fastener and the Adjustoflex Hinges. These features provide automatic and uniform spring pressure on the specially designed Lo-Temp gasket and this pressure forces the gasket into the space between the sides of the door and the edge of the casing. A plug seal is thus established. The hinge spring pressure and the spring pressure of the fastener are both manually adjustable.

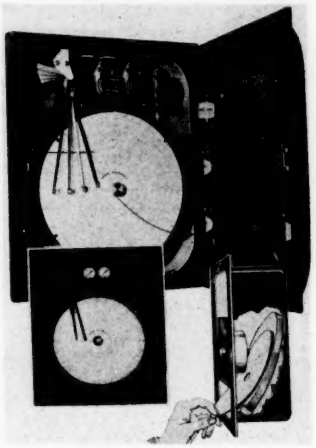
As the gasket wears, the seal can be maintained with its original all-round tightness simply by adjusting the fastener spring to provide the desired compression. Maintenance costs incurred by replacement of the gaskets are minimized because the seal is held even when the gasket is worn. Further, the design of the fastener strike surfaces and their impact relation to the keeper roller assure ease of operation and elimination of shock to both keeper assembly and strike. These exclusive design features tend to overcome some of the difficulties encountered in frequent opening and shutting of the door. Tests made at the Jamison plant show doors to be in good condition after being opened and shut as many as 1½ million times.

Summary

Commercial cooler and freezer doors are now being made of marine quality plywood construction bonded with phenolic resin. Advantages of this type of door for refrigeration purposes are greater rigidity, equal strength in both vertical and horizontal planes, one-piece construction which keeps out moisture and dirt, and ability to withstand weathering, moisture, and temperature changes.

New Pressure and Temperature Recorders

A NEW and amplified line of pressure and temperature recorders is announced by Penn Industrial Instrument Corp., Philadelphia, Pa. Temperature measurement by the self-actuated tube systems of the gas-filled vapor tension and liquid-filled types for ranges from —100 to 800 F are offered. Bourdon springs used are sturdy, thus increasing instrument life. Emphasis is also placed on accurate calibration and long aging of each element.



New Penn Recorder

MANUFACTURERS' NEWS

Feldmann Heads Worthington Sales

WALTHER H. FELDMANN has been named vice-president in charge of sales for Worthington Pump & Machinery Corp., effective May 1, according to an announcement by H. C. Ramsey, president. He resigned as president of the corporation's subsidiary company, Electric Machinery Mfg. Co. of Minneapolis. On the same date, John J. Summersby will become vice president in charge of purchases; Frederic W. Thomas will become general manager of purchases; and Carleton Reynell, general representative, sales and purchasing departments.

Mr. Feldmann graduated as an electrical engineer from the Baltimore Polytechnic Institute in 1915, and from the Westinghouse student course in 1917. He joined Electric Machinery Mfg. Co. in 1922, after having served as a power sales engineer with Consolidated Gas, Electric Light & Power Co. of Baltimore. Advancing with E-M, he served successively as district manager, general sales manager, vice president and general manager until his election as president in 1944. A veteran of World War I, he served as an aviation pilot in the Navy. Mr. Feldmann will make his headquarters at the Worthington executive offices in Harrison. N. J.

Ice Plant Equipment Buys Associated Concern

PURCHASE of the business of the Super Ice Machinery & Equipment Co., 520 W. Somerset St., Philadelphia, Pa., has been announced by the Ice Plant Equipment Co. of Philadelphia. All communications pertaining to unfilled orders, etc., should be addressed to Ice Plant Equipment Co., Philadelphia 25, Pa.

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- Diamond Point Picks
- Easy Starting Briggs & Stratton Engine.

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Double Gig Ice Hoist
Fast - Sturdy -
Dependable -

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ELEVATOR & MFG. CO.
424 W. Town St.
Columbus 8, Ohio

Naval Officers Visit York Corporation

AS PART of their program to study modern manufacturing, production and quality control methods, a group of student officers from the U. S. Naval Post Graduate School at Annapolis, Md., visited York Corporation recently. Included in the group were a number of Naval officers from the United States, Brazil and Argentina, accompanied by the PG school superintendent, Rear Admiral H. A. Spanagel and one of the professors, E. K. Gatcombe.

The morning session included lectures by York Corporation executives: Marshall G. Munce, vice-president; Jack Joslin, manager of the industrial relations division; Paul Stock, chief industrial engineer and J. R. Chamberlain, assistant chief engineer. Later the group was conducted through the Grantley and West York plants.

Group of naval officers who visited York Plants. Front row: Lt. Wayne D. Surface, USN; Lt. R. B. Pettitt, USN; Lt. A. M. Jones, Brazil; Lt. Comdr. Manoel del Castillo, Brazil; Rear Admiral Spanagel; Mr. Munce; Comdr. Geoffrey Thompson, USN; Mr. Stock; Lt. C. D. Rojo, Argentina; Lt. R. F. Miro, Argentina; Lt. J. H. Behl, USN. Second row: C. E. Reaninger, York Corp.; Mr. Joslin; Lt. L. Dutra, Brazil; Lt. F. Monteiro, Brazil; Lt. S. H. Brittingham, USN; Lt. Comdr. K. E. Byrne, USN; Prof. Gatcombe; Lt. E. R. Berisso, Argentina; Lt. Comdr. R. L. Brooks, USN; J. W. Chandler, York Corp.; and R. L. Esterline, York Corp.

Recold Appoints New Northwest Distributor

EFFECTIVE May 1, the distribution of Recold commercial refrigeration and air conditioning equipment in Oregon and Washington will be handled by Refrigerating & Power Specialties Co. This announcement was made recently by Hy Jarvis, vice-president and general manager of Refrigeration Engineering, Inc., Los Angeles, Calif. The new distributor will handle the sale of Recold equipment in their Portland, Tacoma and Seattle offices.

The company is an outgrowth of the old Faget Engineering Company and is one of the oldest refrigeration wholesalers on the Pacific Coast. It was founded in 1926 by A. F. Tudry, who is today president of the organization with headquarters in San Francisco. Mr. Tudry, prior to the inception of Refrigerating & Power Specialties Company, was for many years associated with Faget Engineering Company as sales engineer and president.

In 1926 the Faget plant was completely destroyed by fire and at that time Mr. Tudry took over the distribution of the products being handled by the Faget organization. The new sales organization became known as Refrigerating & Power Specialties.

Head Pressure REDUCED by 50 lbs.

Carnation Company
Fresh Milk and Ice Cream Division
December 26, 1947
Rex Engineering & Sales Co.
Oklahoma City, Oklahoma
Gentlemen:
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We are now installing a smaller size Rex Purger in our Fresh Milk Unit.
Howard A. Bennett, Chief Engineer

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Here's proof of actual results with a Rex Air Purger. When you purge your refrigeration system of non-condensable and permanent gases you reduce head pressure and lower power costs. Investigate today—write.

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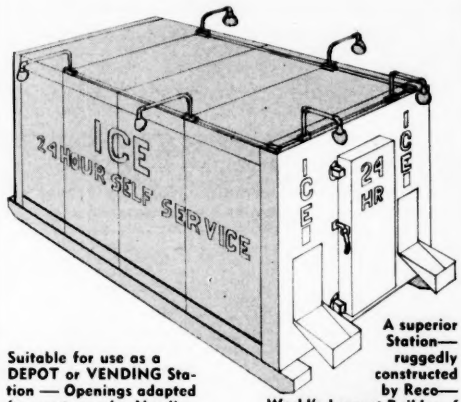
ASSEMBLED, SKID MOUNTED, DURABLE METALPLY EXTERIOR WITH BUILT IN COILS AND COMPRESSOR



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A superior Station— ruggedly constructed by Reco— World's Largest Builder of Low Temperature Sectional Metalclad Walk-Ins. (Truck Delivery Available to Many areas)

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RECO PRODUCTS DIVISION
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Armstrong Cork Elects Officers

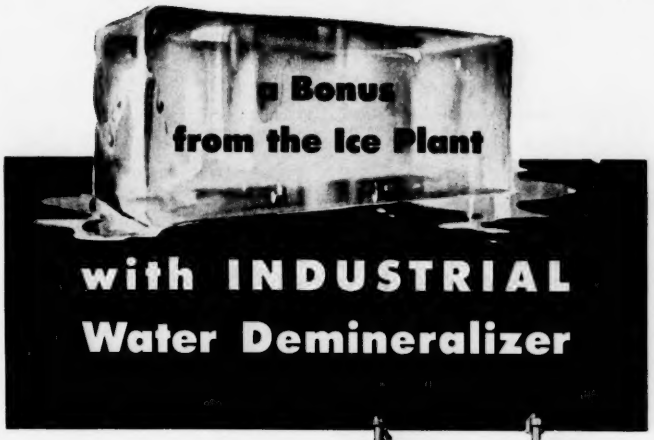
THE Board of Directors of Armstrong Cork Co. at a meeting April 26 elected C. J. Backstrand president and H. W. Prentis, Jr., chairman of the board. Mr. Prentis retired as president after serving 16 years in that capacity. Kenneth O. Bates was re-elected vice-president and designated executive vice-president.

C. J. Backstrand *H. W. Prentis, Jr.*

C. Dudley Armstrong was re-elected vice-president and secretary; Joseph C. Feagley, general manager of the glass and closure division, was re-elected vice-president; C. F. Hawker was re-elected vice-president and continues in charge of manufacture; C. N. Painter, general manager of the Floor Division, was re-elected vice-president; H. R. Peck, general manager of the Building Materials Division, was re-elected vice-president; F. E. Stevens, general manager of the industrial division, was re-elected vice-president; Keith Powlison was re-elected vice-president and controller; M. J. Warnock, formerly treasurer, was elected vice-president and treasurer. Other officers were re-elected as follows: J. J. Fitzpatrick, general manager of foreign operations, assistant secretary; W. D. Martz, assistant secretary and assistant treasurer; John M. Adams, assistant secretary, and Walter F. Kaufman, assistant secretary.

Mr. Backstrand, a native of Los Angeles, joined the Armstrong organization as a student salesman in 1921. Rising through a succession of sales positions, he was named general manager of the floor division in 1933. He was elected a director of the company in 1935 and a vice-president in 1938. He has been first vice-president since 1945.

Mr. Prentis, a native of St. Louis, is a former president of the National Association of Manufacturers and is widely known for his interest in governmental, economic, and social questions. He joined Armstrong in 1907 as an assistant to the manager of the insulation division. Four years later he became the company's first advertising manager. In 1920 he was appointed general sales manager of



A typical two-bed Industrial Water Demineralizer. Standard models available with capacities up to 1000 gph. Special units of any capacity engineered to requirements.

Here's how it works...

Instead of running ordinary city water into the freezing tanks, it is passed through the Industrial demineralizer where beds of ion-exchange resins remove the dissolved mineral salts—delivering the chemical equivalent of pure water.

With this pure water there are no minerals to deposit in the core—so the whole core-pulling operation is eliminated. Furthermore, the amount of ice which cracks in the cans is appreciably reduced. And the transparency of the whole cake is improved—your customers will notice the difference and like it.

It's easy to find out how to get this big bonus from your ice plant. Send us an analysis of the water you are using, the quantity you need, and at what rate (gallons per hour). We will send you complete information on demineralized water, estimate of costs, performance data, etc. Better look into it right away.

FILTERS Pressure Type · PUMPS Centrifugal · CORROSION TESTING APPARATUS Salt Fog • Humidity

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the floor division. In 1926 he became the first vice-president and in 1934 he was elected president.

Mr. Bates, who was born in Minnesota 53 years ago, joined Armstrong in 1921 as a student salesman in the floor division. After serving in a number of sales positions, he was named general manager of the floor division and a vice-president of the company in 1942. He was elected to the board of directors in 1943.

The Board also declared a dividend of 65 cents per share on the common stock of the company payable Thursday June 1 to shareholders of record Monday May 8, also a dividend of 93¾ cents per share on the $3.75 cumulative preferred stock of the company payable Thursday June 15 to shareholders of record Thursday June 1, and a dividend of $1.00 per share on the $4.00 cumulative preferred stock payable Thursday June 15 to shareholders of record Thursday June 1.

Dry Ice Plant to Close

THE Union Carbide and Carbon Corp., Niagara Falls, N. Y., has announced that it will abandon operation of its Niagara Falls dry ice plant by next fall. This plant has been in operation for twenty years and employs 175 people.

New Air Conditioning Concern Established

THE establishment of a new company, the B. S. Williams Co. Inc., with factory and engineering offices at 6 North Street, Mount Vernon, N. Y., has been announced by B. S. Williams, President. The new company will design, develop and manufacture railroad air conditioning and refrigerating equipment and will operate a factory re-building and accessory parts service. In addition, the company will handle liquid cooling and other specialized applications in the industrial and commercial fields. Mr. Williams is known in the air conditioning and refrigeration industry as inventor of the Chrysler Airtemp Packaged 3 and 5 hp air conditioners and panel type refrigerating and air conditioning units, which were used extensively in the war effort.

Skarda Visits Central and South America

AN EXTENDED business trip is under way by Emil F. Skarda, export manager of Refrigeration Engineering Corp., Philadelphia, Pa. Mr. Skarda departed from La Guardia Airport on April 22 and made his first stop in Mexico City, Mex. From there his itinerary has included Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Columbia, and Ecuador.

Other stops will include: Lima, Peru, June 22; La Paz, Bolivia, June 28; Santiago, Chile, July 1; Buenos Aires, Argentina, 6; Montevideo, Uruguay, 8; San Pauls, Brazil, 11; Asuncion, Paraguay, 15; Rio de Janeiro, Recife and Belem, Brazil in the next five days then to Paramaribo, Dutch Guiana on July 29. Seven stops are planned in Venezuela for the month of August then on to N. W. Indies, Puerto Rico, Dominican Republic, and Cuba in September before returning to New York.

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of High Carbon Tool Steel, accurately tempered to give you maximum use.

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of Sound, Clear Hard Wood with Protective Flexible Lacquer Coating.

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CATALOGS AND BULLETINS

New Freon Bulletin

A NEW Technical Bulletin B-2 which describes the "Freon" fluorinated hydrocarbons used as refrigerants, propellents, and in a wide variety of other applications has been issued by Kinetic Chemicals, Inc. The bulletin contains a description of the physical (chemical, and physiological properties of the six "Freon" products which are now available commercially, along with other "Freon" compounds still in pilot-plant stage of development. A comprehensive table of the physical properties of "Freon" fluorinated hydrocarbons is included.

Bulletin Shows Growth of Insurance

A 24-PAGE bulletin has been issued by Bruce Dodson & Co., Kansas City, Mo., commemorating its half century of service—it was founded in 1900. The bulletin sketches the beginnings of the concern, with charts and statistics showing its growth and expounds of reciprocal insurance, upon which the company is based. Profusely illustrated, this bulletin gives a comprehensive review of the development of the company and the service it provides.

Bulletin on Air Conditioners

AN ILLUSTRATED bulletin on unit air conditioners has been issued by the Frick Co., Waynesboro, Pa. These units, the bulletin points out, are suitable for stores, restaurants, offices, banks, small hotels, and other places requiring a cooling system of moderate capacity. Considerable information is given on installation, method of operation and controls and a number of typical installations are illustrated. Copy of the bulletin is available upon request to the Frick Co.

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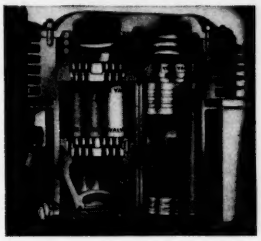

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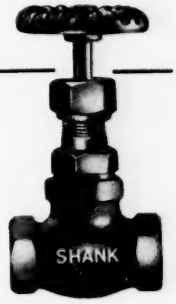

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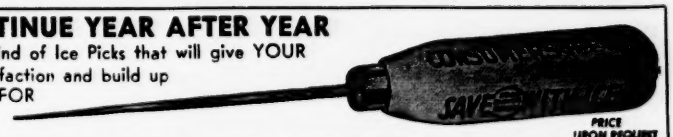

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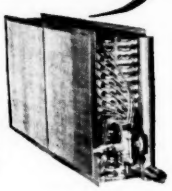

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Frick Co., Waynesboro, Pa.

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York Corp., York, Pa.

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(See Air Compressors)

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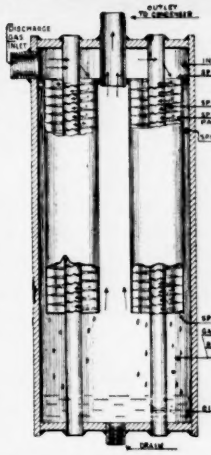

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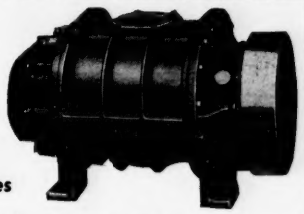

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Index Coupon & Supply Co., La Porte, Ind.
International Paper Co., New York, N. Y.
The Lilly Co., Memphis, Tenn.
Martocello & Co., Jos. A., Philadelphia, Pa.
Union Bag & Paper Corp., New York, N. Y.
United Ice & Oil Supply Co., Boston, Mass.
Vivian Mfg. Co., St. Louis, Mo.

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Gifford-Wood Co., Hudson, N. Y.
Link-Belt Co., Chicago, Ill.

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United Ice & Oil Supply Co., Boston, Mass.

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Baker Refrigeration Corp., So. Windham, Maine
Creamery Package Mfg. Co., Chicago, Ill.
Dersch, Gesswein & Neuert, Inc., Chicago, Ill.
Detroit Ice Machine Co., Detroit, Mich.
Enterprise Equipment Corp., Yonkers, N. Y.
Frick Company, Waynesboro, Pa.
Howe Ice Machine Co., Chicago, Ill.
Ice Plant Equipment Co., Inc. Philadelphia, Pa.
Kehoe Machinery Co., Inc., R. P., Ridgefield Park, N. J.
Martocello & Co., Jos. A., Philadelphia, Pa.
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York Corp., York, Pa.

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United Ice & Oil Supply Co., Boston, Mass.
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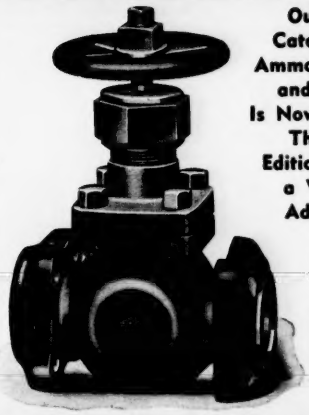

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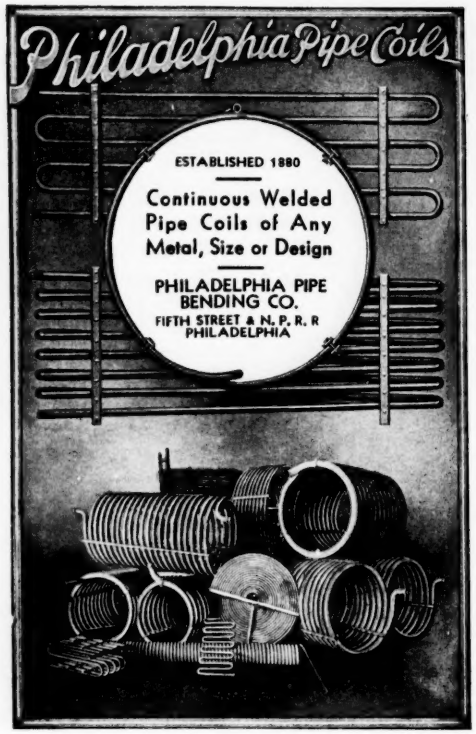
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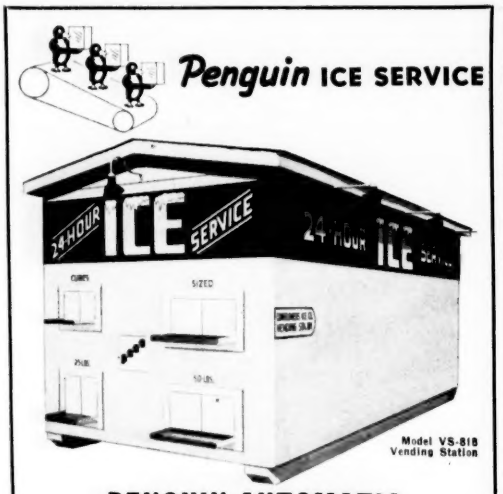

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THE BUYERS

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POSITIONS AND HELP WANTED

POSITION WANTED—Refrigerated Warehouse and ice executive wishes to make change. Further details upon inquiry. Address Box JU-3, Ice and Refrigeration, 435 N. Waller Ave., Chicago 44, Ill.

WANTD—Salesman calling on the Ice Plant trade on the West Coast and Mid-Western states to take on a side line of ice picks, blades and ice pick vending machines. United Ice Supply Co., 55 Beverly St., Boston 14, Mass.

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FOR SALE—Two 30 ton York installation complete ice plants, at a sacrifice. Must be removed from present location. For further information write or wire Box MY-6, Ice and Refrigeration, 435 N. Waller Ave., Chicago 44, Ill.

FOR SALE—ONE HORIZONTAL MOTOR DRIVEN 20 TON VILTER PLANT

238—400 lb. cans, 11⅛″x22⅛″x57″. Entire plant installed new in 1921. S. L. Young & Sons, 405 N. Franklin, Austin, Minnesota.

FOR SALE—Complete equipped Ice Plant, excellent condition; 30 ton daily capacity; all wholesale sold to truckers; brick building 50x100; large lot on railroad; nice four room home; no near competition; city of 17,000; Western Pennsylvania; retiring; sell with property; price reasonable. The Apple Co., Brokers, Cleveland, Ohio.

FOR SALE—224 can York ice plant, electric with double hoist and filler, six trucks, large storage, scoring machine and sizer. Shoe repair shop to get you through the winter. Property located on very valuable lot. Property and equipment appraised at $64,865.00; will take $55,000.00 cash. Inspection invited. Steel Ice Co., Jackson, Mississippi.

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In Southern California, a modern operating small ice plant complete, with latest type equipment. Serving commercial account exclusively. Profits steadily increasing. For complete details contact Box 22, c/o Ice & Refrigeration, Room 623, 610 S. Broadway, Los Angeles, Calif.

FOR SALE—Thirty ton ice plant, York, Diesel driven; also Gifford Wood 6 tier portable automatic hoist; Triangle scoring machine; several D.C. generators and also ice refrigerators; Bohus Coolerators and White Seals, 75 lbs. and 100 lb. top icers; used. Community Ice Co., 6100 Belair Road, Baltimore 6, Md.

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This plant, in excellent condition, includes the following: Ice tank and auxiliary equipment, ice tank 16 cans wide by 24 cans long, 400—48″x11″x22″ ice cans, Frick "Vertiflow" ice tank coil containing 1221 sq. ft. cooling surface complete with accumulator and float valve; all ice cans in four can grids; oak tank covers; Frick F. PR low pressure air system; 5 h.p. vertical agitator; centrifugal type air blower; one ton electric ice tank hoist and crane; Frick core sucking set; Knickerbocker 4 can, can filler; Frick hydraulic four can dump. High Side equipment including Frick 60 ton M S horizontal shell & tube condenser, 30 ton Frick vertical shell & tube condenser, receiver and oil traps. Compressors including Frick 8x8 with flexible coupling, Frick 7x7 with 50 h.p. motor, Frick 5⅛x4 booster with 7½ h.p. motor. Will sell as a unit or in parts. Address The Ohio Valley Baking Company, Middleport, Ohio.

USED MACHINERY—wanted & for sale

FOR SALE—York 8x8 ammonia compressor with fly wheel, serial No. 16312, speed 165 r.p.m. Located in Indianola, Mississippi. Leland Ice & Cold Storage Company, Leland, Miss.

FOR SALE—12x12 Frick ammonia compressor, direct connected to Electric Machinery 100 h.p. synchronous, 3 phase, 60 cycle, 2300 volt A.C. motor, with panel board & exciter. Danville Ice Co. Inc., Danville, Virginia.

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FOR SALE—Three ice tanks with coils and agitators, each 20 cans wide and 16 cans long. Two can dumping equipment for two of these tanks. Excellent condition and very cheap. New Ice Co., 1634 Midland Blvd., Fort Smith, Arkansas.

FOR SALE—4 vertical shell & tube ammonia condensers, each 42″ dia. with 180—2″ dia. x 14′—No. 10 gauge charcoal iron tubes—with 4″ gas, 1½″ liquid, and 1″ equalizer outlets—¾″ purge valve and ¼″ pop valve—500 lb. pressure—1260 sq. ft. Were in regular use until recently replaced by evaporative condensers. Address Box MY-12, Ice and Refrigeration, 435 N. Waller Ave., Chicago 44, Ill.

FOR SALE—Compressors, York 9x9, $750.00; 6x6, $600.00; 4x4, $300.00. Vilter 7½x7½, $600.00; Frick 7x7, $500.00; 5x5, $400.00; 4x4, $300.00. York 2 h.p. Freon, $125.00. Boston type ice tongs 16″, 3 pairs $1.00. Ammonia receivers, condensers, valves, fittings. Write us your requirements. Gordon Equipment Co., 6530 W. Jefferson Ave., Detroit 17, Mich.

FOR SALE—York ammonia compressors, with V-belt drives. GUARANTEED NEW and in original condition; standard manufacturers warranty applying; projects for which originally purchased abandoned; will sell below standard price F.O.B. Birmingham. Description and price: 1—3″ x 3″ $500.00; 2—4″ x 4″ $800.00 each; 1—3″ x 3″ complete self-contained unit, water condenser and 5 h.p. 220V/3P/60C motor and starter $900.00. Birmingham Ice & C. S. Co., Attn. R. W. Bitz, P.O. Drawer 1751, Birmingham, Ala.

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1—30 ton York ice making plant, trunk coil, 4 can pull electric driven.
1—25 ton York ice making plant, brine coolers, electric driven.
1—12 ton York ice making plant, trunk coil electric driven.
2—10x10 Frick ammonia compressors, direct connected to synchronous motor.
1—10x10 York ammonia compressor, late type 360 r.p.m.
1—10x10 York ammonia compressor 250 r.p.m.
1—9x9 York ammonia compressor 250 r.p.m.
1—9x9 York ammonia compressor 200 r.p.m.
1—8x8 Frick ammonia compressor, late type with capacity control valves.
1—8x8 Frick ammonia compressor 277 r.p.m.
1—7x7 Worthington 400 r.p.m.
2—6½x6½ York high speed ammonia compressors, late type.
1—6x6 York 300 r.p.m.
1—5x5 York late style self contained unit.
Assorted brine coolers and condensers ASME coded vessels, like new.

B & E REFRIGERATING CO.
2 Orange St., Newark 2, N. J.
Phone: Mitchell 3-7790 Cable Address "BERECO"

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WANTED—One ton or more York Flake Ice machine. State year and price. Southern Poultry Distributors, Inc., P. O. Box 468, Griffin, Ga.

FOR SALE—Ice Plant Equipment. Acme Blower size 44, Newall tank agitator, crane and hoist, ice can dump, can filler, Frick automatic purger, 50 ice cans. Also, Pomona deep well pump with 7½ h.p. motor. All equipment in good condition. Make us an offer. Orleans G.L.F. Cold Storage, Albion, N. Y., Phone 190.

FOR SALE—One 6¾″x5″ V/W York ammonia booster compressor 3 cylinder V-belt drive complete with base, including 440 volt A.C. motor and 36″x 12″ long D.E. gas and liquor cooler plus valves. This equipment is new and has never been installed. If interested contact W. A. Moore, General Manager, New Orleans Cold Storage & Warehouse Co. Ltd., 305 Gaiennie St., New Orleans, La.

FOR SALE—Two 3x3 twin Fricks, one 4x4 York, self-contained. 3x3, 4x4, 5x5, 6x6, 7½x7½, 8x8 and 9x9 York compressors, splash lubrication. One 20 ton and one 40 ton Vogt horizontal shell & tube condensers, one 2 h.p. vertical agitator. One 15 ton horizontal enclosed shell & tube brine cooler. Write E. Niebling, 1546 St. Clair Ave., Mt. Healthy, Cincinnati 31, Ohio.

FOR SALE—Two 10x10 York ammonia compressors complete, motor 220/3/60, V-belt driven. One 3x3 York self-contained compressor. One Worthington air compressor with 400☐ storage tank. One Weyman brine pump, bronze water end, complete with base 15 h.p. motor. Two Weyman brine pumps 3 h.p. motor. Miscellaneous refrigeration items, little used, priced to sell. A. M. Kuhn, P. O. Box 6847, Pittsburgh, Penna.

For Sale—Ice Plants & Equipment
30- 40- 50 Ton Ice Plants

1—10″x10″ York ammonia compressor direct connected to a 60 H.P. synchronous motor 200 R.P.M.
1—10″x10″ York ammonia compressor direct connected to 100 H.P. synchronous motor 200 R.P.M.
1—9″x9″ York ammonia compressor direct connected to 50 H.P. synchronous motor 200 R.P.M.
1—10″x10″ York ammonia compressor 200 R.P.M.
2—9″x9″ York ammonia compressors 200 R.P.M.
1—Duplex 10″x10″ Carbondale High speed Compressor direct connected to 250 H.P. synchronous motor.
1—6½x6½ York ammonia compressors high speed with or without motors.
1—6″x6″ Voss ammonia compressor.
2—4″x4″ York H.S. Self Contained units.
1—3″x3″ Frick H.S. Self Contained units.
Shell and tube vertical condensers 36″x14″—162—2″ tubes.
2—16″ dia. x 10′-0 long 6 pass enclosed type ammonia condenser.
1—25″ dia. x 10′-0 long 5 pass enclosed type ammonia condenser.
Assorted sizes electric hoists ranging from 2 to 6 ton capacity.
1—Gifford Wood Uline Scoring Machine Series No. 3.
1—Gifford Wood four tier, ice tiering machine.
3—Gifford & Wood Creasey Ice Crushers, Motor driven.
1000—11″x22″x48″ Ice cans good condition.
Brine coolers, double pipe 2″ and 2″ horizontal brine coolers, submerged.
Shell and tube type 1¼″ and 2″ ammonia coils approximately 10,000 Feet.
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Compressors With or Without Motors

	Item No.
1—4x4 York, 300 RPM	16
6—6x6 York's, 200 RPM	20
1—6x6 Frick, 257 RPM	21
2—6½x6½ Arctics, 350 RPM, forced feed lub.	30
1—7¼x7¼ Baker, 350 RPM, forced feed lubrication	35
1—7x7 Frick, 200 RPM	40
1—7½x7½ York, 200 RPM	51
1—8x8 Frick, 400 RPM forced feed lub., V-belt wheel	57
2—8x8 Yorks, 400 RPM, forced feed lub., V-belt wheels	58
2—9x9 Arctic, 300 RPM, forced feed lub.	62
1—9x9 Frick 225 RPM direct connected to a 60 HP synchronous motor, forced feed lubrication	67
2—9x9 Late type Yorks, 400 RPM, forced feed lub.	69
1—9x9 Frick, 200 RPM	70
1—9x9 York, 200 RPM	71
1—9x9 Worthington, 325 RPM, forced feed lub.	72
1—10x10 De La Vergne, 360 RPM, forced feed lub.	73
1—10x10 York, 257 RPM, forced feed lub.	80
1—10x10 Carbondale, 100 HP synch. motor, 350 RPM	81
3—10x10 York's, 225 RPM, semi-forced feed lub.	82
1—12x12 Frick, Forced feed, 300 RPM	89
1—11x13 York, 164 RPM, forced feed lub.	90
1—17x18 Frick, direct conn. 300 HP synch. motor	91

Diesel Driven and Diesel Engines

1—8x8 York—Direct connected to 50 H.P. Fairbanks-Morse at 257 R.P.M.	210
1—175 H.P. Fairbanks-Morse Diesel engine	211
1—150 H.P. Van Severin—300 R.P.M.—Diesel engine	212

Steam Driven

1—7½x7½ Vertical York, 200 R.P.M. direct connected to steam engine	326
1—8x8 Vertical York, 300 R.P.M. direct connected	327

Complete Ice Plants

	Item No.
1—15-ton electric driven plant	630
1—600 Can Trunk Coil Type—York Plant, Brand New Tank. *Complete with 10 Can Grids. This plant is equal to new*	631
Brand New 8 to 10-ton Clear Ice-Making Plants—110 Cans—Electric or Diesel Drive—2 Can Pull	632
1—*247 Can, 22-ton ice plants, like new*	632A
1—35-38 ton New Clear Ice Making Plants	635

Self-Contained Units

3—4x4 York & Fricks	742
1—5x5 York—390 R.P.M.	743
1—4½x5 Lipman—360 R.P.M.	744
1—3x3 Worthington	748
1—5x5 Frick—Forced Feed—400 R.P.M. Latest Type	758

Brine Coolers

1—34x12—96—2—Retubed	801
1—34x10—100—2	802
1—48"x16'—130—2" tubes	808

Condensers

3—100 ton shell and tube condensers retubed	919
2—Stands—Vogt Multi-tube—Each stand 6 pipes high. Each pipe 9"x18" with 7—2" tubes	920
1—125-ton, Vertical Shell & Tube, 196 2" tubes	921
1—120 ton, 216—2" retubed Vertical Shell & Tube	922
2—20 ton Horizontal—retubed	924

Ice Cans

150—11½"x22½"x44"—cap refinished in zinc
500—11"x22"x47"—ice cans

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Compressors With or Without Motors

	Item No.
3x3 to 5 x 5—390 R.P.M.	1001
6x6 to 10x10—390 R.P.M.	1002
3x3 to 5 x 5—Self-contained units, complete	1003
5x5—Self contained—15 H.P. motor—V Belt	1004

Ammonia Condensers

4—12¾x12 Horizontal—36—1¼" tubes	1020
2—30x14 Vertical 109—2" tubes	1021
1—16"x10"x10' Shell and Tube Condenser, 60 1¼" tubes	1022

Ice Cans

50—100 lb. cans—15½"x8"x31"	1041
40—50 lb. cans—6"x12"x26"	1042

Ammonia Valves and Fittings

⅜" to ¾"—Screwed Expansion Valves	1050
½" to 2"—Screwed Globe Valves	1051

	Item No.
1" to 6"—Square Flanged Globe Valves	1052
Check Valves	1053
Relief Valves	1054
Strainers	1055
Steel & Malleable Fittings	1056
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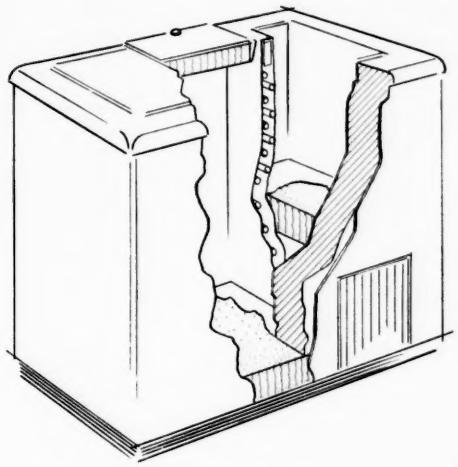

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